

On activation of the starting solenoid,
the start position must be reached.

APPLICATION
Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 10,0 Q
Edition : 12.06.87
Superceeded : 11.82
Calibrating oil : ISO-4113
Combination no. : 0 401 846 759
Injection pump
Pump designation : PE6P110A320RS3108Y
EP type number : 0 411 816 729
Governor
Governor design. : RQV250...1100PA649
Governor no. : 0 421 815 346

Customer-spec. information
Customer : VOLVO

Engine : THD100EC

1st version kW : 180.0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 11.10...11.20

Del.quantity cm3/ : 13.8...14.0

100H.: (13.5...14.3)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 5.0...5.2

Del.quantity cm3/ : 3.2...3.6

100H.: (2.9...3.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.10...1.30

2nd speed 1/min: 500

Sleeve travel mm: 4.10...4.90

3rd speed 1/min: 700

Sleeve travel mm: 6.30...6.70

4th speed 1/min: 950

Sleeve travel mm: 6.30...6.70

5th speed 1/min: 1100

Sleeve travel mm: 7.00...7.50

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1175

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm3/ : 138.0...140.0

1000H.: (135.0...143.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 55...63

Testing:

1st c-rod trav.mm : 10.10

Speed 1/min : 1140...1150

2nd c-rod trav.mm : 4.00

Speed 1/min : 1205...1235

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 8...16

Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.70

Speed 1/min : 250

C-rod trav.mm : 5.00...5.20

C-rod trav.mm : 2.00

Speed 1/min : 345...405

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 11.10...11.20

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 9.60...9.80

2nd pressure hPa : 275

C-rod trav.mm : 9.90...10.00

3rd pressure hPa : 400

C-rod trav.mm : 10.70...10.90

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 700

Del.quantity cm3/ : 105.5...108.5

1000H.: (103.0...111.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 170.0...200.0

1000H.: (166.0...204.0)

Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250

Contr.-rod trav.mm: 5.00...5.20

Del.quantity cm3/ : 32.0...36.0

1000H.: (29.5...38.5)

Dispersion cm3/ : 3.00

1000H.: (6.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.

Permissible alteration from 2.20...2.90
mm

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 10,0 Q1
Edition : 12.06.87
Superceeded : 11.82
Calibrating oil : ISO-4113
Combination no. : 0 401 846 760
Injection pump
Pump designation : PE6P110A32ORS3108X
EP type number : 0 411 816 730
Governor
Governor design. : RQV250...1100PA649
Governor no. : 0 421 813 346

Customer-spec. information
Customer : VOLVO

Engine : THD100ED

1st version kW : 203.0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
: (2.95...3.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.10...12.20

Del.quantity cm3/ : 15.9...16.2

100H.: (15.6...16.4)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 5.0...5.2

Del.quantity cm3/ : 3.2...3.6

100H.: (2.9...3.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.10...1.30

2nd speed 1/min: 500

Sleeve travel mm: 4.10...4.90

3rd speed 1/min: 700

Sleeve travel mm: 6.30...6.70

4th speed 1/min: 950

Sleeve travel mm: 6.30...6.70

5th speed 1/min: 1100

Sleeve travel mm: 7.00...7.50

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1175

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 1200

Del.quantity cm3/ : 159.0...162.0

1000H.: (156.5...164.5)

Dispersion cm3/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 61...69

Testing:

1st c-rod trav.mm : 11.10

Speed 1/min : 1140...1150

2nd c-rod trav.mm : 4.00

Speed 1/min : 1205...1235

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 8...12

Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.70

Speed 1/min : 250

C-rod trav.mm : 5.00...5.20

C-rod trav.mm : 2.00

Speed 1/min : 345...405

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 1200

Contr.-rod trav.mm: 12.10...12.20

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 9.30...9.40

2nd pressure hPa : 290

C-rod trav.mm : 9.60...9.70

3rd pressure hPa : 700

C-rod trav.mm : 11.80...12.00

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 700

Del.quantity cm3/ : 105.5...108.5

1000H.: (103.0...111.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 160.0...190.0

1000H.: (156.0...194.0)

Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250

Contr.-rod trav.mm: 5.00...5.20

Del.quantity cm3/ : 32.0...36.0

1000H.: (29.5...38.5)

Dispersion cm3/ : 3.00

1000H.: (6.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.

Permissible alteration from 2.20...2.90
mm

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,0 R6
Edition : 09.03.87
Superceeded : 1.85
Calibrating oil : ISO-4113
Combination no. : 0 401 846 763
Injection pump
Pump designation : PE6P110A72ORS3040
EP type number : 0 411 816 713
Governor
Governor design. : RQV200...1000PA555-1
Governor no. : 0 421 813 361

Customer-spec. information
Customer : SCANIA

Engine : DS11 14

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.30...3.40
 : (3.25...3.45)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.60...13.70

Del.quantity cm3/ : 16.8...17.0

100H.: (16.6...17.2)

Dispersion cm3/ : 0.6

100H.: (0.8)

2nd speed 1/min: 225.0
Contr.-rod trav. m: 4.4...4.6
Del.quantity cm3/ : 1.7...2.1
100H.: (-)
Dispersion cm3/ : 0.2
100H.: (0.4)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225
Sleeve travel mm: 1.30...1.40
2nd speed 1/min: 330
Sleeve travel mm: 2.30...2.70
3rd speed 1/min: 550
Sleeve travel mm: 3.90...4.20
4th speed 1/min: 1040
Sleeve travel mm: 8.00...8.20
5th speed 1/min: 1160
Sleeve travel mm: 9.60...9.90

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1070
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Charge press. hPa : 900
Del.quantity cm3/ : 168.0...170.0
1000H.: (166.0...172.0)
Dispersion cm3/ : 6.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 57...65

Testing:
1st c-rod trav.mm : 12.60
Speed 1/min : 1040...1050
2nd c-rod trav.mm : 4.00
Speed 1/min : 1150...1180
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 4...12

Testing:
Speed 1/min : 100
C-rod trav.mm min : 5.90
Speed 1/min : 225
C-rod trav.mm : 4.40...4.60
C-rod trav.mm : 2.00
Speed 1/min : 310...370

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 13.60...13.70

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 12.00...12.10
2nd pressure hPa : 420
C-rod trav.mm : 13.20...13.30
3rd pressure hPa : 290
C-rod trav.mm : 12.30...12.50

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 900
Speed 1/min : 1000
Del.quantity cm3/ : 171.5...176.5
1000H.: (169.0...179.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 133.0...137.0
1000H.: (131.0...139.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225
Contr.-rod trav.mm: 4.40...4.60
Del.quantity cm3/ : 17.0...21.0
1000H.: (-)
Dispersion cm3/ : 2.00
1000H.: (4.00)

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on August 29, 1983
Start of delivery - engine: 19⁰ before
TDC
Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 10,0 03
 Edition : 12.06.87
 Superceeded : 10.12.86
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 768
 Injection pump
 Pump designation : PE6P110A32ORS3080-1
 EP type number : 0 411 816 734
 Governor
 Governor design. : RQV250...1025PA589
 Governor no. : 0 421 813 332

Customer-spec. information
 Customer : VOLVO

Engine : TD100FA

1st version kW : 220.0
 Speed 1/min: 2050

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Contr.-rod trav.mm: 9.00...12.00

A08

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.20...13.30

Del.quantity cm3/ : 17.9...18.2

100H.: (17.7...18.5)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 4.3...4.5

Del.quantity cm3/ : 1.5...1.9

100H.: (1.2...2.1)

Dispersion cm3/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.20...1.30

2nd speed 1/min: 350

Sleeve travel mm: 2.20...2.80

3rd speed 1/min: 430

Sleeve travel mm: 3.50...3.90

4th speed 1/min: 1080

Sleeve travel mm: 8.40...8.50

5th speed 1/min: 1150

Sleeve travel mm: 9.50...9.80

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1080

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm3/ : 179.5...182.5

1000H.: (177.0...185.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 61...69

Testing:

1st c-rod trav.mm : 12.20
Speed 1/min : 1085...1095
2nd c-rod trav.mm : 4.00
Speed 1/min : 1160...1190
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 5...13

Testing:

Speed 1/min : 100
C-rod trav.mm min : 5.80
Speed 1/min : 250
C-rod trav.mm : 4.30...4.50

CONSTANT REGULATION

Speed 1/min : 270...380

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 13.20...13.30

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 10.50...10.60
2nd pressure hPa : 670
C-rod trav.mm : 13.00...13.10
3rd pressure hPa : 270
C-rod trav.mm : 10.80...11.10

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 1000
Del.quantity cm3/ : 171.0...177.0
1000H.: (169.0...179.0)
Charge press. hPa : -
Speed 1/min : 700
Del.quantity cm3/ : 132.0...135.0
1000H.: (129.5...137.5)

STARTING FUEL DELIVERY

A09

Speed 1/min : 100
Del.quantity cm3/ : 150.0...200.0
1000H.: (146.0...204.0)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 4.30...4.50
Del.quantity cm3/ : 15.0...19.0
1000H.: (12.5...21.5)
Dispersion cm3/ : 3.00
1000H.: (6.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 12,0 K
 Edition : 21.05.87
 Superceeded : 12.9.86
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 772
 Injection pump
 Pump designation : PE6P120A32ORS3118
 EP type number : 0 411 826 726
 Governor
 Governor design. : RQV250...1025PA6S7
 Governor no. : 0 421 813 368

Customer-spec. information
 Customer : VOLVO

Engine : TD 121 F

1st version kW : 282.4
 Speed 1/min: 2050

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.60...2.70
 : (2.55...2.75)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.30...13.40

Del.quantity cm3/ : 23.8...24.1

100H.: (23.5...24.4)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 3.3...3.5

Del.quantity cm3/ : 1.8...2.3

100H.: (-)

Dispersion cm3/ : 0.5

100H.: (0.7)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1090

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 1200

Del.quantity cm3/ : 238.0...241.0

1000H.: (235.0...244.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 61...69

Testing:

1st c-rod trav.mm : 12.30

Speed 1/min : 1085...1095

2nd c-rod trav.mm : 4.00

Speed 1/min : 1150...1180

3rd c-rod trav.mm : 4.00

4th speed 1/min : 1250
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 6...14

Testing:

Speed 1/min : 100
C-rod trav.mm min : 4.80
Speed 1/min : 250
C-rod trav.mm : 3.30...3.50
C-rod trav.mm : 2.00
Speed 1/min : 285...345

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 1200
Contr.-rod trav.mm: 13.30...13.40

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 8.80...9.00
2nd pressure hPa : 800
C-rod trav.mm : 13.10...13.20
3rd pressure hPa : 170
C-rod trav.mm : 9.20...9.50

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 700
Del.quantity cm3/ : 138.0...142.0
1000H.: (135.0...145.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...280.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 3.30...3.50
Del.quantity cm3/ : 18.0...23.0
1000H.: (-)
Dispersion cm3/ : 5.00
1000H.: (7.00)

Remarks:

Delivery-valve spring pre-tension =

2.40...2.60 mm.

Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 12, 0 I
Edition : 21.05.87
Superceeded : 25.9.86
Calibrating oil : ISO-4113

Combination no. : 0 401 846 773

Injection pump
Pump designation : PE6P120A32ORS3116
EP type number : 0 411 826 727
Governor
Governor design. : RQV250...102SPA657
Governor no. : 0 421 813 368

Customer-spec. information
Customer : VOLVO

Engine : TD 120 G

1st version kW : 242.7
Speed 1/min: 2050

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.60...2.70
 : (2.55...2.75)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 11.40...11.50

Del.quantity cm3/ : 19.7...19.9

100H.: (19.4...20.2)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0
Contr.-rod trav. m: 5.6...5.8
Del.quantity cm3/ : 2.2...2.6
100H.: (1.9...2.9)
Dispersion cm3/ : 0.5
100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 200
Sleeve travel mm: 0.60...0.90
2nd speed 1/min: 600
Sleeve travel mm: 4.50...5.50
3rd speed 1/min: 670
Sleeve travel mm: 6.40...6.60
4th speed 1/min: 930
Sleeve travel mm: 6.40...6.60
5th speed 1/min: 1025
Sleeve travel mm: 0.00...7.50

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1080
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Charge press. hPa : 700

Del.quantity cm3/ : 197.0...199.0
1000H.: (194.0...202.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 58...66

Testing:

1st c-rod trav.mm : 10.40
Speed 1/min : 1065...1075
2nd c-rod trav.mm : 4.00
Speed 1/min : 1125...1155
3rd c-rod trav.mm : 4.00
4th speed 1/min : 1250
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 6...14

Testing:

Speed 1/min : 100
C-rod trav.mm min : 7.10
Speed 1/min : 250
C-rod trav.mm : 5.60...5.80
C-rod trav.mm : 2.00
Speed 1/min : 350...410

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 700
Contr.-rod trav.mm: 11.40...11.50

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.00...9.10
2nd pressure hPa : 430
C-rod trav.mm : 10.80...10.90
3rd pressure hPa : 230
C-rod trav.mm : 9.50...9.70

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : -
Speed 1/min : 700
Del.quantity cm3/ : 148.0...150.0
1000H.: (145.0...153.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...270.0
1000H.: (236.0...274.0)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 5.60...5.80
Del.quantity cm3/ : 22.0...26.0
1000H.: (19.0...29.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 10,0 Q4
Edition : 12.06.87
Superceeded : 9.3.87
Calibrating oil : ISO-4113
Combination no. : 0 401 846 785
Injection pump
Pump designation : PE6P110A32ORS3108
EP type number : 0 411 816 727
Governor
Governor design. : RQV250...1100PAS89
Governor no. : 0 421 813 307

Customer-spec. information
Customer : VOLVO

Engine : N10/TD1016B

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
: (2.95...3.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 11.90...12.00

Del.quantity cm3/ : 15.2...15.4

100H.: (14.9...15.7)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 4.1...4.3

Del.quantity cm3/ : 1.7...2.1

100H.: (1.4...2.3)

Dispersion cm3/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.20...1.30

2nd speed 1/min: 450

Sleeve travel mm: 3.70...4.10

3rd speed 1/min: 700

Sleeve travel mm: 6.40...6.60

4th speed 1/min: 1000

Sleeve travel mm: 6.40...6.60

5th speed 1/min: 1160

Sleeve travel mm: 8.20...8.40

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1180

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm3/ : 152.0...154.0

1000H.: (149.0...157.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 59...67

Testing:

1st c-rod trav.mm : 10.90
Speed 1/min : 1160...1170
2nd c-rod trav.mm : 4.00
Speed 1/min : 1215...1245
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 4...12

Testing:

Speed 1/min : 100
C-rod trav.mm min : 5.60
Speed 1/min : 250
C-rod trav.mm : 4.10...4.30
C-rod trav.mm : 2.00
Speed 1/min : 310...370

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 11.90...12.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 10.10...10.20
2nd pressure hPa : 550
C-rod trav.mm : 11.70...11.80
3rd pressure hPa : 350
C-rod trav.mm : 10.40...10.60

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 1000
Del.quantity cm3/ : 146.0...150.0
1000H.: (143.0...153.0)
Charge press. hPa : -
Speed 1/min : 700
Del.quantity cm3/ : 116.0...119.0
1000H.: (113.5...121.5)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 170.0...200.0
1000H.: (170.0...200.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 4.10...4.30
Del.quantity cm3/ : 17.0...21.0
1000H.: (14.5...23.5)
Dispersion cm3/ : 3.00
1000H.: (6.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 9,0 E
Edition : 12.09.86
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 401 846 804

Injection pump
Pump designation : PE6P120A32ORS3141
EP type number : 0 411 826 744
Governor
Governor design. : RQV200...1100PA729-1
Governor no. : 0 421 813 470

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DS9 02

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
: (4.95...5.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 10.40...10.50

Del.quantity cm3/ : 13.2...13.4

100H.: (13.0...13.6)

Dispersion cm3/ : 0.6

100H.: (0.9)

2nd speed 1/min: 225.0

Contr.-rod trav. m: 4.4...4.6

Del.quantity cm3/ : 1.2...1.6

100H.: (-)

Dispersion cm3/ : 0.2

100H.: (0.4)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225

Sleeve travel mm: 0.60...0.70

2nd speed 1/min: 350

Sleeve travel mm: 2.20...2.70

3rd speed 1/min: 425

Sleeve travel mm: 3.60...4.20

4th speed 1/min: 1150

Sleeve travel mm: 8.40...8.60

5th speed 1/min: 1250

Sleeve travel mm: 9.30...9.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1150

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 132.0...134.0

1000H.: (130.0...136.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 59...67

Testing:

1st c-rod trav.mm : 9.40

Speed 1/min : 1140...1150

2nd c-rod trav.mm : 4.00

Speed 1/min : 1235...1265

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 3...11

Testing:

Speed 1/min : 100

C-rod trav.mm min : 5.90

Speed 1/min : 225

C-rod trav.mm : 4.40...4.60

C-rod trav.mm : 2.00

Speed 1/min : 290...350

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1100

Del.quantity cm3/ : 143.0...151.0

1000H.: (141.0...153.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 290.0...340.0

1000H.: (-)

Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225

Contr.-rod trav.mm: 4.40...4.60

Remarks:

ADDITIONAL INFORMATION

Delivery-valve spring pre-tension

3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm

Check and set without ROBO diaphragm

For comb. with letter index see

VDI-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on December 18, 1986

Start of delivery - engine: 17° before
TDC

Firing sequence of engine:

1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 9,0 E 1
Edition : 26.03.87
Superceeded : -
Calibrating oil : ISO-4113,
Combination no. : 0 401 846 804 Q
Injection pump
Pump designation : PE6P120A320RS3141Q
EP type number : 0 411 826 744
Governor
Governor design. : RQV200...1100PA729-1
Governor no. : 0 421 813 470

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DS9 02

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 10.00...10.10

Del.quantity cm3/ : 12.8...13.0

100H.: (12.5...13.3)

Dispersion cm3/ : 0.6

100H.: (0.9)

2nd speed 1/min: 225.0

Contr.-rod trav. m: 4.4...4.6

Del.quantity cm3/ : 1.1...1.5

100H.: (-)

Dispersion cm3/ : 0.2

100H.: (0.4)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225

Sleeve travel mm: 0.60...0.70

2nd speed 1/min: 350

Sleeve travel mm: 2.20...2.70

3rd speed 1/min: 425

Sleeve travel mm: 3.60...4.20

4th speed 1/min: 1150

Sleeve travel mm: 8.40...8.60

5th speed 1/min: 1250

Sleeve travel mm: 9.30...9.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1150

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 128.0...130.0

1000H.: (125.0...133.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 59...67

Testing:

1st c-rod trav.mm : 9.40

Speed 1/min : 1140...1150

2nd c-rod trav.mm : 4.00

Speed 1/min : 1235...1265

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED 1

Control-lever

position degrees: 3...11

Testing:

Speed 1/min : 100

C-rod trav.mm min : 5.90

Speed 1/min : 225

C-rod trav.mm : 4.40...4.60

C-rod trav.mm : 2.00

Speed 1/min : 290...350

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1100

Del.quantity cm3/ : 132.0...140.0

1000H.: (130.0...142.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 290.0...340.0

1000H.: (-)

Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225

Contr.-rod trav.mm: 4.40...4.60

Del.quantity cm3/ : 11.0...15.0

1000H.: (-)

Remarks:

Delivery-valve spring pre-tension

3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm

ADDITIONAL INFORMATION

Check and set without R0B0 diaphragam

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on December 18, 1986

Start of delivery - engine: 17° before
TDC

Firing sequence of engine:

1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 9,0 G
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 401 846 815

Injection pump
Pump designation : PE6P120A32ORS3171
EP type number : 0 411 826 749
Governor
Governor design. : RQ750PA796
Governor no. : 0 421 801 345

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DN9 41

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00

A22

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 9.00...9.10

Del.quantity cm3/ : 11.2...11.4

100H.: (10.9...11.7)

Dispersion cm3/ : 0.5

100H.: (0.8)

SLEEVE POSITION

Control-lever position
Degree: 45...47
Speed 1/min: 600
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Del.quantity cm3/ : 112.0...114.0
1000H.: (109.0...117.0)
Dispersion cm3/ : 5.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 14...22

Testing:

1st c-rod trav.mm : 8.00
Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 769...782
4th speed 1/min : 850
C-rod trav.mm : 0.00...1.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 290.0...340.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

HIGH IDLE
Contr.-rod trav.mm: 4.60...4.80
Dispersion cm3/ : 4.00
1000H.: (7.00)

Remarks:
APPLICATION
Generator

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on December 6, 1986
Engine start of delivery: 18° BTDC

Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 9,0 G 1
 Edition : 09.03.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 816
 Injection pump
 Pump designation : PE6P120A32ORS3171
 EP type number : 0 411 826 749
 Governor
 Governor design. : RQ900PA796-1
 Governor no. : 0 421 801 346

Customer-spec. information
 Customer : SAAB-SCANIA

Engine : DN 9 41

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
 Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 850

 Contr.-rod trav.mm: 9.00...9.10

 Del.quantity cm3/ : 12.0...12.2

 100H.: (11.7...12.5)

 Dispersion cm3/ : 0.5

 100H.: (0.8)

SLEEVE POSITION

Control-lever position
 Degree: 45...47
 Speed 1/min: 600
 Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 850
 Del.quantity cm3/ : 120.0...122.0
 1000H.: (117.0...125.0)
 Dispersion cm3/ : 5.00
 1000H.: (8.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 15...23

Testing:

1st c-rod trav.mm : 8.00
 Speed 1/min : 900...905
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 923...938
 4th speed 1/min : 1000
 C-rod trav.mm : 0.00...1.00

STARTING FUEL DELIVERY

Speed 1/min : 100
 Del.quantity cm3/ : 290.0...340.0
 1000H.: (-)
 Contr.-rod trav.mm: 20.00...21.00

HIGH IDLE

Contr.-rod trav.mm: 4.50...4.70

Dispersion cm³/ : 4.00
1000H.: (7.00)

Remarks:

ADDITIONAL INFORMATION

Check and set without ROB0 diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on December 6, 1986
Engine start of delivery: 18° BTDC

Firing sequence of engine:
1-5-3-6-2-4.

LOWEST RATED SPEED I

Control-lever
position degrees: 6...14

Testing:

Speed 1/min : 100
C-rod trav.mm min : ?
Speed 1/min : 250
C-rod trav.mm : ?

CONSTANT REGULATION

Speed 1/min : 250...400
compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 700
Contr.-rod trav.mm: 11.70...11.80

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : ?
2nd pressure hPa : 430
C-rod trav.mm : 11.50...11.60
3rd pressure hPa : 75
C-rod trav.mm : ?

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 700
Del.quantity cm3/ : 168.0...170.0
1000H.: (165.0...173.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250
Del.quantity cm3/ : 18.0...23.0
1000H.: (15.0...26.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm,
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 12,1 A1
 Edition : 02.06.87
 Superseded : 12.9.86
 Calibrating oil : ISO-4113

Combination no. : 0 401 846 828

Injection pump
 Pump designation : PE6P120A32ORS3165
 EP type number : 0 411 826 747
 Governor
 Governor design. : RQV300...102SPA657-1
 2
 Governor no. : 0 421 813 571

Customer-spec. information
 Customer : VOLVO

Engine : TID 121G

1st version kW : 243.0
 Speed 1/min: 2050

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.60...2.70
 : (2.55...2.75)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 11.60...11.70

Del.quantity cm3/ : 19.7...20.0

100H.: (19.4...20.3)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 3.7...3.9

Del.quantity cm3/ : 2.2...2.6

Dispersion cm3/ : 0.5

100H.: (0.7)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.70...1.80

2nd speed 1/min: 370

Sleeve travel mm: 2.60...2.90

3rd speed 1/min: 430

Sleeve travel mm: 3.60...3.80

4th speed 1/min: 1080

Sleeve travel mm: 6.80...7.00

5th speed 1/min: 1160

Sleeve travel mm: 8.10...8.30

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1070

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 1000

Del.quantity cm3/ : 197.0...200.0
1000H.: (194.0...203.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 53...61

Testing:
1st c-rod trav.mm : 10.60
Speed 1/min : 1085...1095
2nd c-rod trav.mm : 4.00
Speed 1/min : 1160...1190
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 6...14

Testing:
Speed 1/min : 100
C-rod trav.mm min : 5.20
Speed 1/min : 300
C-rod trav.mm : 3.70...3.90

CONSTANT REGULATION

Speed 1/min : 300...400

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 1000
Contr.-rod trav.mm: 11.60...11.70

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 10.30...10.40
2nd pressure hPa : 300
C-rod trav.mm : 11.40...11.50
3rd pressure hPa : 150
C-rod trav.mm : 10.60...10.80

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 700
Del.quantity cm3/ : 166.0...169.0
1000H.: (163.0...172.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...280.0
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 3.70...3.90
Del.quantity cm3/ : 22.0...26.0
Dispersion cm3/ : 5.00
1000H.: (7.00)

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

Dispersion cm³/ : 4.00
1000H.: (8.00)

Remarks:

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 57...65

Testing:

1st c-rod trav.mm : 12.10

Speed 1/min : 990...1000

2nd c-rod trav.mm : 4.00

Speed 1/min : 1080...1110

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 9...17

Testing:

Speed 1/min : 100

C-rod trav.mm min : 10.60

Speed 1/min : 300

C-rod trav.mm : 8.80...9.00

CONSTANT REGULATION

Speed 1/min : 300...450

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 975

C-rod trav.mm : 13.10...13.20

2nd speed 1/min : 600

C-rod trav.mm : 12.90...13.10

3rd speed 1/min : 750

C-rod trav.mm : 13.10...13.30

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm³/ : 117.0...120.0

1000H.: (114.0...123.0)

Dispersion cm³/ : 6.00

1000H.: (9.00)

Speed 1/min : 750

Del.quantity cm³/ : 120.0...124.0

1000H.: (117.0...127.0)

Dispersion cm³/ : 6.00

1000H.: 9.00

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm³/ : 120.0...140.0

1000H.: (116.0...144.0)

B03

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,7 D
Edition : 12.09.86
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 401 846 831

Injection pump
Pump designation : PE6P120A32ORS3183
EP type number : 0 411 826 754
Governor
Governor design. : RQ250/1000PA832
Governor no. : 0 421 801 368

Customer-spec. information
Customer : DAF

Engine : WS 270

1st version kW : 265.0
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-gil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 13.00...13.10

Del.quantity cm3/ : 21.7...21.9

100H.: (21.4...22.2)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0
Contr.-rod trav.m: 6.7...6.9
Del.quantity cm3/ : 1.6...2.2
100H.: (1.3...2.5)
Dispersion cm3/ : 0.8
100H.: (1.2)

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 550
Contr.-rod travelmm: 15.60...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 850
Charge press. hPa : 1000
Del.quantity cm3/ : 217.0...219.0
1000H.: (214.0...222.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

Setting point:
Speed 1/min : 550
Contr.-rod trav.mm: 16.0

Testing:
1st c-rod trav.mm : 12.00
Speed 1/min : 1035...1050
2nd c-rod trav.mm : 4.00
Speed 1/min : 1160...1190
4th speed 1/min : 1250
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 250
Contr.-rod trav.mm: 7.0

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.50
Speed 1/min : 250
C-rod trav.mm : 6.90...7.10
C-rod trav.mm : 2.00
Speed 1/min : 350...390

TORQUE CONTROL

Dimension a mm : -
Torque-control curve - 1st version
1st speed 1/min : 850
C-rod trav.mm : 13.30...13.40
2nd speed 1/min : 1000
C-rod trav.mm : 13.20...13.40

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 1000
Contr.-rod trav.mm: 13.00...13.10

Measurement

Speed 1/min : 600
1st pressure hPa : -
C-rod trav.mm : 10.10...10.30
2nd pressure hPa : 650
C-rod trav.mm : 12.40...12.50
3rd pressure hPa : 390
C-rod trav.mm : 10.70...11.00

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 600
Del.quantity cm3/ : 144.0...146.0
1000H.: (141.0...149.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 260.0...300.0
1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.90...7.10

Del.quantity cm3/ : 14.0...20.0
1000H.: (11.0...23.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,7 D1
Edition : 15.05.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 846 831
Injection pump
Pump designation : PE6P120A32ORS3183-1Y
EP type number : 0 411 826 765
Governor
Governor design. : RQ250/1000PA832
Governor no. : 0 421 801 368

Customer-spec. information
Customer : DAF

Engine : WS 282

1st version kW : 282.0
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm3/ : 21.9...22.1

 100H.: (21.6...22.4)

Dispersion cm3/ : 0.5

 100H.: (0.9)

2nd speed 1/min: 250.0
Contr.-rod trav. m: 6.9...7.1
Del.quantity cm3/ : 1.4...2.0
 100H.: (1.1...2.3)
Dispersion cm3/ : 0.8
 100H.: (1.2)

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 550
Contr.-rod travelmm: 15.60...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 850
Charge press. hPa : 1000
Del.quantity cm3/ : 219.0...221.0
 1000H.: (216.0...224.0)
Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

Setting point:
Speed 1/min : 550
Contr.-rod trav.mm: 16.0

Testing:
1st c-rod trav.mm : 12.10
Speed 1/min : 1035...1050
2nd c-rod trav.mm : 4.00
Speed 1/min : 1120...1150
4th speed 1/min : 1250
C-rod trav.mm : 0.00...1.00

B08

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 250
Contr.-rod trav.mm: 7.0

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.50
Speed 1/min : 250
C-rod trav.mm : 6.90...7.10
C-rod trav.mm : 2.00
Speed 1/min : 350...390

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 850
C-rod trav.mm : 13.30...13.40
2nd speed 1/min : 1000
C-rod trav.mm : 13.20...13.40

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 1000
Contr.-rod trav.mm: 13.10...13.20

Measurement

Speed 1/min : 600
1st pressure hPa : -
C-rod trav.mm : 10.10...10.30
2nd pressure hPa : 650
C-rod trav.mm : 12.40...12.50
3rd pressure hPa : 390
C-rod trav.mm : 10.70...11.00

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 600
Del.quantity cm3/ : 144.0...146.0
 1000H.: (141.0...149.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 260.0...300.0
 1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.90...7.10
Del.quantity cm3/ : 14.0...20.0
 1000H.: (11.0...23.0)

Dispersion cm3/ : 8.00
 1000H.: (12.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 L 1
Edition : 05.11.86
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 401 846 832

Injection pump
Pump designation : PE6P120A32OLS3815-11
EP type number : 0 411 826 826
Governor
Governor design. : RQ300/1050PA840
Governor no. : 0 421 801 374

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 441 A

1st version kW : 191,0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-gil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
 : (3.55...3.75)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing⁰CS: 0-45-120-165-240-285
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/min: 600

Contr.-rod trav.mm: 13.10...13.30

Del.quantity cm3/ : 19.0...19.2
 100H.: (18.7...19.5)

Dispersion cm3/ : 0.5
 100H.: (0.9)

2nd speed 1/min: 325.0
 Contr.-rod trav. m: 5.4...5.6
 Del.quantity cm3/ : 1.4...2.2
 100H.: (1.1...2.5)
 Dispersion cm3/ : 0.8
 100H.: (1.2)

(B) Setting of injection pump with externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
 Sleeve travel mm: 2.00...2.20
 2nd speed 1/min: 600
 Sleeve travel mm: 5.90...6.10
 3rd speed 1/min: 900
 Sleeve travel mm: 6.60...6.80
 4th speed 1/min: 1100
 Sleeve travel mm: 7.00...7.40
 5th speed 1/min: 1175
 Sleeve travel mm: 9.30...10.00

SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed 1/min: 600
 Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 600
 Charge press. hPa : 1100
 Del.quantity cm3/ : 190.0...192.0
 1000H.: (187.0...195.0)
 Dispersion cm3/ : 5.0
 1000H.: (9.0)

HIGHEST RATED SPEED

Setting point:
 Speed 1/min : 600
 Contr.-rod trav.mm: 20.0

Testing:
 1st c-rod trav.mm : 11.40
 Speed 1/min : 1095...1110
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1200...1230
 4th speed 1/min : 1350
 C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring
 Speed 1/min : 325
 Contr.-rod trav.mm: 5.5

Testing:
 Speed 1/min : 100
 C-rod trav.mm min : 6.90
 Speed 1/min : 325
 C-rod trav.mm : 5.40...5.60
 C-rod trav.mm : 2.00
 Speed 1/min : 340...380

TORQUE CONTROL

Dimension a mm : 0.90
 2nd speed 1/min : 1050
 C-rod trav.mm : 12.30...12.50
 3rd speed 1/min : 700
 C-rod trav.mm : 13.50...13.70

compensator (LDA,ADA,ALDA)

1st version

Setting
 Speed 1/min : 600
 Pressure hPa : 700
 Contr.-rod trav.mm: 13.10...13.30

Measurement

Speed 1/min : 600
 1st pressure hPa : 350
 C-rod trav.mm : 11.20...11.40
 2nd pressure hPa : 550
 C-rod trav.mm : 12.40...12.60
 3rd pressure hPa : 780
 C-rod trav.mm : 13.20...13.30
 4th pressure hPa : 1100

C-rod trav.mm : 13.45...13.55

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1100

Speed 1/min : 1050

Del.quantity cm3/ : 184.0...187.0

1000H.: (181.0...190.0)

Dispersion cm3/ : 8.00

1000H.: (12.0)

Charge press. hPa : 1100

Speed 1/min : 700

Del.quantity cm3/ : 204.0...208.0

1000H.: (201.0...211.0)

Dispersion cm3/ : 8.00

1000H.: 12.00

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 129.0...131.0

1000H.: (126.0...134.0)

Dispersion cm3/ : 8.00

1000H.: (-)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 190.0...210.0

1000H.: (186.0...214.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 L 2
 Edition : 10.12.86
 Superseded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 832
 Injection pump
 Pump designation : PE6P120A32OLS3815-11
 EP type number : 0 411 826 755
 Governor
 Governor design. : RQ325/1050PA840
 Governor no. : 0 421 801 374

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 441 A

1st version kW : 191,0
 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
 : (3.55...3.75)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing⁰CS: 0-45-120-165-240-285
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 600

 Contr.-rod trav.mm: 13.10...13.30

 Del.quantity cm3/ : 19.0...19.2

 100H.: (18.7...19.5)

 Dispersion cm3/ : 0.5

 100H.: (0.9)

 2nd speed 1/min: 325.0
 Contr.-rod trav. m: 5.4...5.6
 Del.quantity cm3/ : 1.4...2.2
 100H.: (1.1...2.5)
 Dispersion cm3/ : 0.8
 100H.: (1.2)

(B) Setting of injection pump with externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
 Sleeve travel mm: 2.00...2.20
 2nd speed 1/min: 600
 Sleeve travel mm: 5.90...6.10
 3rd speed 1/min: 900
 Sleeve travel mm: 6.60...6.80
 4th speed 1/min: 1100
 Sleeve travel mm: 7.00...7.40
 5th speed 1/min: 1175
 Sleeve travel mm: 9.50...10.00

SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed 1/min: 600
 Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 600
 Charge press. hPa : 700
 Del.quantity cm3/ : 190.0...192.0
 1000H.: (187.0...195.0)
 Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

Setting point:
 Speed 1/min : 600
 Contr.-rod trav.mm: 20.0

Testing:
 1st c-rod trav.mm : 11.40
 Speed 1/min : 1095...1110
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1200...1230
 4th speed 1/min : 1350
 C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring
 Speed 1/min : 325
 Contr.-rod trav.mm: 5.5

Testing:
 Speed 1/min : 100
 C-rod trav.mm min : 6.90
 Speed 1/min : 325
 C-rod trav.mm : 5.40...5.60
 C-rod trav.mm : 2.00
 Speed 1/min : 340...380

TORQUE CONTROL

Dimension a mm : 0.90
 2nd speed 1/min : 1050
 C-rod trav.mm : 12.30...12.50
 3rd speed 1/min : 700
 C-rod trav.mm : 13.50...13.70

compensator (LDA,ADA,ALDA)

1st version

Setting
 Speed 1/min : 600
 Pressure hPa : 700
 Contr.-rod trav.mm: 13.10...13.30

Measurement

Speed 1/min : 600
 1st pressure hPa : 350
 C-rod trav.mm : 11.20...11.40
 2nd pressure hPa : 550
 C-rod trav.mm : 12.40...12.60
 3rd pressure hPa : 780
 C-rod trav.mm : 13.20...13.30
 4th pressure hPa : 1100

C-rod trav.mm : 13.45...13.55

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1100

Speed 1/min : 1050

Del.quantity cm3/ : 184.0...187.0

1000H.: (181.0...190.0)

Dispersion cm3/ : 8.00

1000H.: (12.0)

Charge press. hPa : 1100

Speed 1/min : 700

Del.quantity cm3/ : 204.0...208.0

1000H.: (201.0...211.0)

Dispersion cm3/ : 8.00

1000H.: (12.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 129.0...131.0

1000H.: (126.0...134.0)

Dispersion cm3/ : 8.00

1000H.: (-)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 190.0...210.0

1000H.: (186.0...214.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,7 D2
Edition : 22.05.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 401 846 835

Injection pump
Pump designation : PE6P120A320RS3183-1
EP type number : 0 411 826 758
Governor
Governor design. : RQ250/1000PA832
Governor no. : 0 421 801 368

Customer-spec. information
Customer : DAF

Engine : WS 259

1st version kW : 259.0
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values ----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - ^o : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 12.60...12.70

Del.quantity cm3/ : 20.0...20.2

 100H.: (19.7...20.5)

Dispersion cm3/ : 0.5

 100H.: (0.9)

2nd speed 1/min: 250.0
Contr.-rod trav. m: 7.2...7.4
Del.quantity cm3/ : 1.6...2.2
 100H.: (1.3...2.5)
Dispersion cm3/ : 0.8
 100H.: (1.2)

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 550
Contr.-rod travelmm: 15.60...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 850
Charge press. hPa : 1000
Del.quantity cm3/ : 200.0...202.0
 1000H.: (197.0...205.0)
Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

Setting point:
Speed 1/min : 550
Contr.-rod trav.mm: 16.0

Testing:
1st c-rod trav.mm : 11.60
Speed 1/min : 1035...1050
2nd c-rod trav.mm : 4.00
Speed 1/min : 1125...1155
4th speed 1/min : 1250
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 250
Contr.-rod trav.mm: 7.3

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.80
Speed 1/min : 250
C-rod trav.mm : 7.20...7.40
C-rod trav.mm : 2.00
Speed 1/min : 350...390

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 850
C-rod trav.mm : 12.60...12.70
2nd speed 1/min : 1000
C-rod trav.mm : 12.50...12.70

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 1000
Contr.-rod trav.mm: 12.60...12.70

Measurement

Speed 1/min : 600
1st pressure hPa : -
C-rod trav.mm : 10.60...10.80
2nd pressure hPa : 510
C-rod trav.mm : 12.10...12.20
3rd pressure hPa : 360
C-rod trav.mm : 11.00...11.20

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 600
Del.quantity cm3/ : 144.0...146.0
 1000H.: (141.0...149.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 260.0...300.0
 1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 7.20...7.40
Del.quantity cm3/ : 16.0...22.0
 1000H.: (13.0...25.0)

Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 10,0 T
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 401 846 838

Injection pump
Pump designation : PE6P110A32ORS3152
EP type number : 0 411 816 746
Governor
Governor design. : RQV250...1100PAS89
Governor no. : 0 421 813 307

Customer-spec. information
Customer : VOLVO-BM

Engine : TD102

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
: (3.45...3.65)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.00...13.10

Del.quantity cm3/ : 17.5...17.7

100H.: (17.2...18.0)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 3.9...4.1

Del.quantity cm3/ : 1.5...1.9

100H.: (-)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.20...1.30

2nd speed 1/min: 350

Sleeve travel mm: 2.20...2.70

3rd speed 1/min: 450

Sleeve travel mm: 3.70...4.10

4th speed 1/min: 750

Sleeve travel mm: 6.40...6.60

5th speed 1/min: 1160

Sleeve travel mm: 8.10...8.30

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1180

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 1000

Del.quantity cm3/ : 175.0...177.0

1000H.: (172.0...180.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

1st version

B20

Control-lever
position degrees: 59...67

Testing:

1st c-rod trav.mm : 12.00

Speed 1/min : 1150...1170

2nd c-rod trav.mm : 4.00

Speed 1/min : 1220...1250

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 5...13

Testing:

Speed 1/min : 100

C-rod trav.mm min : 5.40

Speed 1/min : 250

C-rod trav.mm : 3.90...4.10

CONSTANT REGULATION

Speed 1/min : 250...360

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 1000

Contr.-rod trav.mm: 13.00...13.10

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 11.50...11.60

2nd pressure hPa : 480

C-rod trav.mm : 12.80...12.90

3rd pressure hPa : 340

C-rod trav.mm : 11.80...12.00

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 700

Del.quantity cm3/ : 152.0...154.0

1000H.: (149.0...157.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 160.0...190.0

1000H.: (156.0...194.0)

Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 3.90...4.10
Del.quantity cm3/ : 15.0...19.0
Dispersion cm3/ : 4.50
1000H.: (7.50)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.

Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,7 E
Edition : 10.04.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 846 839
Injection pump
Pump designation : PE6P120A32ORS3183
EP type number : 0 411 826 754
Governor
Governor design. : RQV250...1000PA851
Governor no. : 0 421 813 604

Customer-spec. information
Customer : DAF

Engine : WS 225

1st version kW : 225.0
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
: (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm3/ : 21.9...22.1

100H.: (21.6...22.4)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.8...7.0

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.30...1.70

2nd speed 1/min: 400

Sleeve travel mm: 3.20...3.60

3rd speed 1/min: 800

Sleeve travel mm: 5.80...6.20

4th speed 1/min: 1000

Sleeve travel mm: 7.90...8.10

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1040

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Charge press. hPa : 1000

Del.quantity cm3/ : 219.0...221.0

1000H.: (216.0...224.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 51...59

Testing:

1st c-rod trav.mm : 12.10
Speed 1/min : 1040...1050
2nd c-rod trav.mm : 4.00
Speed 1/min : 1130...1160
4th speed 1/min : 1250
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 15...23

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.40
Speed 1/min : 250
C-rod trav.mm : 6.80...7.00

CONSTANT REGULATION

Speed 1/min : 275...385

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600
Pressure hPa : 1000
Contr.-rod trav.mm: 13.10...13.20

Measurement

Speed 1/min : 600

1st pressure hPa : -
C-rod trav.mm : 10.20...10.40
2nd pressure hPa : 650
C-rod trav.mm : 12.40...12.50
3rd pressure hPa : 390
C-rod trav.mm : 10.60...10.90

SWITCH-OVER POINT

Speed 1/min : 200 (220)

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 600
Del.quantity cm3/ : 144.0...146.0
1000H.: (141.0...149.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 260.0...300.0
1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.80...7.00
Del.quantity cm3/ : 14.0...20.0
1000H.: (11.0...23.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,7 E1
 Edition : 15.05.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 839
 Injection pump
 Pump designation : PE6P120A320RS3183-1Y
 EP type number : 0 411 826 765
 Governor
 Governor design. : RQV250...1000PA851
 Governor no. : 0 421 813 604

Customer-spec. information
 Customer : DAF

Engine : WS 282

1st version kW : 282.0
 Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 < Wall thickness
 Length mm : 6.00x1.50x1000

(Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm3/ : 21.9...22.1

100H.: (21.6...22.4)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0
Contr.-rod trav. m: 5.8...7.0
Del.quantity cm3/ : 1.4...2.0
100H.: (1.1...2.3)
Dispersion cm3/ : 0.8
100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250
Sleeve travel mm: 1.30...1.70
2nd speed 1/min: 400
Sleeve travel mm: 3.20...3.60
3rd speed 1/min: 800
Sleeve travel mm: 5.80...6.20
4th speed 1/min: 1000
Sleeve travel mm: 7.90...8.10

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1040
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 850
Charge press. hPa : 1000
Del.quantity cm3/ : 219.0...221.0
1000H.: (216.0...224.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 51...59

Testing:

1st c-rod trav.mm : 12.10
Speed 1/min : 1040...1050
2nd c-rod trav.mm : 4.00
Speed 1/min : 1130...1160
4th speed 1/min : 1250
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 15...23

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.40
Speed 1/min : 250
C-rod trav.mm : 6.80...7.00

CONSTANT REGULATION

Speed 1/min : 275...385
compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 1000
Contr.-rod trav.mm: 13.10...13.20

Measurement

Speed 1/min : 600
1st pressure hPa : -
C-rod trav.mm : 10.20...10.40
2nd pressure hPa : 650
C-rod trav.mm : 12.40...12.50
3rd pressure hPa : 390
C-rod trav.mm : 10.60...10.90

SWITCH-OVER POINT

Speed 1/min : 200 (220)

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 600
Del.quantity cm3/ : 144.0...146.0
1000H.: (141.0...149.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 260.0...300.0
1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.80...7.00
Del.quantity cm3/ : 14.0...20.0
1000H.: (11.0...23.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,7 E2
Edition : 13.05.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 401 846 840

Injection pump
Pump designation : PE6P120A32ORS3183-12
EP type number : 0 411 826 760
Governor
Governor design. : RQV250...1000PA851-1
Governor no. : 0 421 813 605

Customer-spec. information
Customer : DAF

Engine : WS 225

1st version kW : 225.0
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 11.30...11.40

Del.quantity cm3/ : 18.1...18.3

100H.: (17.8...18.6)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0
Contr.-rod trav. m: 6.5...6.7
Del.quantity cm3/ : 1.4...2.0
100H.: (1.1...2.3)
Dispersion cm3/ : 0.8
100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250
Sleeve travel mm: 1.30...1.70
2nd speed 1/min: 400
Sleeve travel mm: 3.20...3.60
3rd speed 1/min: 800
Sleeve travel mm: 5.80...6.20
4th speed 1/min: 1000
Sleeve travel mm: 7.90...8.10

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1040
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 850
Charge press. hPa : 1000
Del.quantity cm3/ : 181.0...183.0
1000H.: (178.0...186.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 50...58

Testing:

1st c-rod trav.mm : 10.30
Speed 1/min : 1040...1050
2nd c-rod trav.mm : 4.00
Speed 1/min : 1120...1150
4th speed 1/min : 1250
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 15...23

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.10
Speed 1/min : 250
C-rod trav.mm : 6.50...6.70

CONSTANT REGULATION

Speed 1/min : 275...385
compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 1000
Contr.-rod trav.mm: 11.30...11.40

Measurement

Speed 1/min : 600
1st pressure hPa : -
C-rod trav.mm : 10.10...10.30
2nd pressure hPa : 410
C-rod trav.mm : 11.00...11.10
3rd pressure hPa : 340
C-rod trav.mm : 10.50...10.70

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 600
Del.quantity cm3/ : 144.0...146.0
1000H.: (141.0...149.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 260.0...300.0
1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.50...6.70
Del.quantity cm3/ : 14.0...20.0
1000H.: (11.0...23.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : UNI 13,8 C
Edition : 30.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 401 846 845

Injection pump
Pump designation : PE6P120A72ORS3192
EP type number : 0 411 826 761
Governor
Governor design. : RQV300...900PA857
Governor no. : 0 421 813 613

Customer-spec. information
Customer : IVECO-UNIC

Engine : 8210.42.101-115

1st version kW : 265.0
Speed 1/min: 1800

TEST BENCH REQUIREMENTS

Calibrating-gil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.40...3.50
 : (3.35...3.55)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - ^o : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 900

Contr.-rod trav.mm: 13.50...13.60

Del.quantity cm3/ : 25.4...25.6

100H.: (25.1...25.9)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 4.3...4.5

Del.quantity cm3/ : 1.5...2.1

100H.: (1.2...2.4)

Dispersion cm3/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 0.70...0.90

2nd speed 1/min: 550

Sleeve travel mm: 4.00...4.60

3rd speed 1/min: 800

Sleeve travel mm: 6.60...6.90

4th speed 1/min: 900

Sleeve travel mm: 7.70...7.90

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 965

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 900

Charge press. hPa : 900

Del.quantity cm3/ : 254.0...256.0

1000H.: (251.0...259.0)

Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 57...65

Testing:

1st c-rod trav.mm : 12.50

Speed 1/min : 940...950

2nd c-rod trav.mm : 4.00

Speed 1/min : 1055...1085

4th speed 1/min : 1200

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 4...12

Testing:

Speed 1/min : 100

C-rod trav.mm min : 5.90

Speed 1/min : 300

C-rod trav.mm : 4.30...4.50

CONSTANT REGULATION

Speed 1/min : 370...490

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 13.50...13.60

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 9.40...9.60

2nd pressure hPa : 590

C-rod trav.mm : 12.60...12.70

3rd pressure hPa : 390

C-rod trav.mm : 10.40...10.80

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900

Speed 1/min : 500

Del.quantity cm3/ : 249.0...255.0

1000H.: (246.0...258.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 125.0...127.0

1000H.: (122.0...130.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...260.0
1000H.: (236.0...264.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 4.30...4.50
Del.quantity cm3/ : 15.0...21.0
1000H.: (12.0...24.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : UNI 13,8 D
Edition : 10.04.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 846 848
Injection pump
Pump designation : PE6P120A72ORS3195
EP type number : 0 411 826 762
Governor
Governor design. : RQV300...900PA857
Governor no. : 0 421 813 613

Customer-spec. information
Customer : IVECO-UNIC

Engine : 8210.22.101-105

1st version kW : 242.0
Speed 1/min: 1800

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.40...3.50
: (3.35...3.55)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 900

Contr.-rod trav.mm: 12.30...12.40

Del.quantity cm3/ : 23.2...23.4
100H.: (22.9...23.7)

Dispersion cm3/ : 0.5
100H.: (0.9)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 3.9...4.1
Del.quantity cm3/ : 1.7...2.3
100H.: (1.4...2.6)
Dispersion cm3/ : 0.8
100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 0.50...0.90
2nd speed 1/min: 550
Sleeve travel mm: 4.00...4.60
3rd speed 1/min: 800
Sleeve travel mm: 6.60...7.00
4th speed 1/min: 900
Sleeve travel mm: 7.70...7.90

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 965
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 900
Charge press. hPa : 900
Del.quantity cm3/ : 232.0...234.0
1000H.: (229.0...237.0)

Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 56...64

Testing:

1st c-rod trav.mm : 11.30

Speed 1/min : 940...950

2nd c-rod trav.mm : 4.00

Speed 1/min : 1045...1075

4th speed 1/min : 1200

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 3...11

Testing:

Speed 1/min : 100

C-rod trav.mm min : 5.50

Speed 1/min : 300

C-rod trav.mm : 3.90...4.10

C-rod trav.mm : 2.00

Speed 1/min : 345...405

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 12.30...12.40

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 8.90...9.10

2nd pressure hPa : 520

C-rod trav.mm : 11.50...11.60

3rd pressure hPa : 370

C-rod trav.mm : 9.60...9.80

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900

Speed 1/min : 500

Del.quantity cm3/ : 227.0...233.0

1000H.: (224.0...236.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 127.0...129.0

1000H.: (124.0...132.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 250.0...270.0

1000H.: (246.0...274.0)

LOW IDLE

Speed 1/min : 300

Contr.-rod trav.mm: 3.90...4.10

Del.quantity cm3/ : 17.0...23.0

1000H.: (14.0...26.0)

Dispersion cm3/ : 8.00

1000H.: (12.00)

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 10,0 U
Edition : 12.06.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 846 850
Injection pump
Pump designation : PE6P110A32ORS3197
EP type number : 0 411 816 752
Governor
Governor design. : RQV300...1100PA232-2
Governor no. : 0 421 813 639

Customer-spec. information
Customer : VOLVO-BM

Engine : TD102

1st version kW : 196.0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
: (3.45...3.65)
Contr.-rod trav.mm: 9.00...12.00

C07

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.80...12.90

Del.quantity cm3/ : 14.7...14.9

100H.: (14.4...15.2)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 300.0

Del.quantity cm3/ : 1.6...2.0

100H.: (1.3...2.2)

Dispersion cm3/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.40...1.60

2nd speed 1/min: 350

Sleeve travel mm: 1.70...2.30

3rd speed 1/min: 700

Sleeve travel mm: 4.40...5.00

4th speed 1/min: 1165

Sleeve travel mm: 8.70...8.90

5th speed 1/min: 1255

Sleeve travel mm: 9.60...10.00

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1150

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm3/ : 147.0...149.0

1000H.: (144.0...152.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

1- 5- 3- 6- 2- 4

0-60-120-180-240-300
0.50 (0.75)

1

700

12.80...12.90

14.7...14.9

(14.4...15.2)

0.4

(0.7)

300.0

1.6...2.0

(1.3...2.2)

0.3

(0.6)

ection pump with
ted governor

300

1.40...1.60

350

1.70...2.30

700

4.40...5.00

1165

8.70...8.90

1255

9.60...10.00

ion

-1

1150

15.20...17.80

FULL-LOAD STOP

700

900

147.0...149.0

(144.0...152.0)

4.00

(7.50)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 104...112

Testing:

1st c-rod trav.mm : 11.80

Speed 1/min : 1160...1170

2nd c-rod trav.mm : 4.00

Speed 1/min : 1240...1270

4th speed 1/min : 1400

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 69...77

Testing:

Speed 1/min : 100

C-rod trav.mm min : ?

Speed 1/min : 300

C-rod trav.mm : ?

CONSTANT REGULATION

Speed 1/min : ?

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 12.80...12.90

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 11.30...11.50

2nd pressure hPa : 300

C-rod trav.mm : 12.60...12.70

3rd pressure hPa : 150

C-rod trav.mm : 11.70...11.90

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900

Speed 1/min : 1000

Del.quantity cm3/ : 142.0...146.0

1000H.: (139.0...149.0)

Charge press. hPa : -

Speed 1/min : 700

Del.quantity cm3/ : 118.5...121.5

1000H.: (116.0...124.0)

STARTING FUEL DELIVERY

C08

Speed 1/min : 100

Del.quantity cm3/ : 150.0...170.0

1000H.: (146.0...174.0)

LOW IDLE

Speed 1/min : 300

Del.quantity cm3/ : 16.0...20.0

1000H.: (13.5...22.5)

Dispersion cm3/ : 3.00

1000H.: (6.00)

Remarks:

APPLICATION

Loading machine

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 10,0 V
 Edition : 12.06.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 851
 Injection pump
 Pump designation : PE6P110A32ORS3080
 EP type number : 0 411 816 722
 Governor
 Governor design. : RQV250...1050PA657
 -17
 Governor no. : 0 421 813 652
 Customer-spec. information
 Customer : VOLVO

Engine : TD102FAQ

1st version kW : 221.0
 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)

Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.70...13.80

Del.quantity cm3/ : 18.5...18.7

100H.: (18.2...19.0)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 3.8...4.0

Del.quantity cm3/ : 1.5...1.9

100H.: (1.2...2.1)

Dispersion cm3/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.00...1.40

2nd speed 1/min: 350

Sleeve travel mm: 2.20...2.80

3rd speed 1/min: 700

Sleeve travel mm: 6.40...6.60

4th speed 1/min: 1085

Sleeve travel mm: 7.80...8.00

5th speed 1/min: 1170

Sleeve travel mm: 9.20...9.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1120

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm3/ : 185.0...187.0

1000H.: (182.0...190.0)

Dispersion cm3/ : 4.00
1000H.: (7.50)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 59...67

Testing:

1st c-rod trav.mm : 12.70

Speed 1/min : 1080...1090

2nd c-rod trav.mm : 4.00

Speed 1/min : 1155...1185

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 4...12

Testing:

Speed 1/min : 100

C-rod trav.mm min : 5.30

Speed 1/min : 250

C-rod trav.mm : 3.80...4.00

CONSTANT REGULATION

Speed 1/min : 250...370

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 13.70...13.80

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 10.80...11.00

2nd pressure hPa : 520

C-rod trav.mm : 13.50...13.60

3rd pressure hPa : 100

C-rod trav.mm : 11.10...11.30

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 700

Del.quantity cm3/ : 136.0...139.0

1000H.: (133.5...141.5)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 160.0...190.0
1000H.: (156.0...194.0)

Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250

Contr.-rod trav.mm: 3.80...4.00

Del.quantity cm3/ : 15.0...19.0

1000H.: (12.5...21.5)

Dispersion cm3/ : 3.00

1000H.: (6.00)

Delivery-valve spring pre-tension =

2.40...2.60 mm.

Permissible alteration from 2.20...2.90 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 12,OK12
 Edition : 12.06.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 854
 Injection pump
 Pump designation : PE6P120A32ORS3118-1
 EP type number : 0 411 826 739
 Governor
 Governor design. : RQV250...850PA657-20
 Governor no. : 0 421 813 650

Customer-spec. information
 Customer : VOLVO

Engine : TD122FCQ

1st version kW : 287.0
 Speed 1/min: 1700

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Lubricating oil : 8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.60...2.70
 : (2.55...2.75)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.30...12.40

Del.quantity cm3/ : 21.4...21.6

100H.: (21.1...21.9)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 3.3...3.5

Del.quantity cm3/ : 1.8...2.3

100H.: (1.5...2.5)

Dispersion cm3/ : 0.5

100H.: (0.7)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.00...1.40

2nd speed 1/min: 350

Sleeve travel mm: 2.20...2.80

3rd speed 1/min: 700

Sleeve travel mm: 6.40...6.60

4th speed 1/min: 885

Sleeve travel mm: 7.60...7.80

5th speed 1/min: 955

Sleeve travel mm: 8.80...9.20

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 930

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm3/ : 214.5...216.5
1000H.: (211.5...219.5)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 57...65

Testing:
1st c-rod trav.mm : 11.30
Speed 1/min : 880...890
2nd c-rod trav.mm : 4.00
Speed 1/min : 990...970
4th speed 1/min : 1100
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 3..11

Testing:
Speed 1/min : 100
C-rod trav.mm min : 4.80
Speed 1/min : 250
C-rod trav.mm : 3.30...3.50

CONSTANT REGULATION

Speed 1/min : 250...350

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 12.30...12.40

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.20...9.40
2nd pressure hPa : 80
C-rod trav.mm : 9.60...9.70

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 700
Del.quantity cm3/ : 154.0...156.0
1000H.: (151.0...159.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 240.0...280.0
1000H.: (236.0...284.0)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 3.30...3.50
Del.quantity cm3/ : 18.0...23.0
1000H.: (15.5...25.5)
Dispersion cm3/ : 5.00
Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 14,5 A
 Edition : 30.03.87
 Superceeded : 11.85
 Calibrating oil : ISO-4113
 Combination no. : 0 401 848 082
 Injection pump
 Pump designation : PE8P110A52OLS851
 EP type number : 0 411 818 046
 Governor
 Governor design. : RQ250/1150PA688
 Governor no. : 0 421 801 231

Customer-spec. information
 Customer : MAN

Engine : D2848T

1st version kW : 245.0
 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 10.80...10.90

Del.quantity cm3/ : 14.3...14.5

100H.: (14.0...14.7)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 4.9...5.1

Del.quantity cm3/ : 1.8...2.4

100H.: (1.5...2.6)

Dispersion cm3/ : 0.4

100H.: (0.7)

SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 600

Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Charge press. hPa : 1000

Del.quantity cm3/ : 143.0...145.0

1000H.: (140.5...147.5)

Dispersion cm3/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 9.80

Speed 1/min : 1195...1210

2nd c-rod trav.mm : 4.00

Speed 1/min : 1280...1310

3rd c-rod trav.mm : 4.00

4th speed 1/min : 1450
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 250
Contr.-rod trav.mm: 5.0

Testing:

Speed 1/min : 100
C-rod trav.mm min : 6.50
Speed 1/min : 250
C-rod trav.mm : 4.90...5.10
C-rod trav.mm : 2.00
Speed 1/min : 310...350

TORQUE CONTROL

Dimension a mm : -
Torque-control curve - 1st version
1st speed 1/min : 1150
C-rod trav.mm : 10.80...10.90
2nd speed 1/min : 700
C-rod trav.mm : 10.80...11.00

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 1000
Contr.-rod trav.mm: 10.80...10.90

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 9.60...9.70
2nd pressure hPa : 290
C-rod trav.mm : 10.50...10.60
3rd pressure hPa : 230
C-rod trav.mm : 10.00...10.20

SWITCH-OVER POINT

Speed 1/min : 170 (190)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1000
Speed 1/min : 700
Del.quantity cm3/ : 137.0...141.0
1000H.: (134.0...144.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 108.0...110.0
1000H.: (105.5...112.5)
Dispersion cm3/ : -
1000H.: (7.50)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 190.0...210.0
1000H.: (186.0...214.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 4.90...5.10
Del.quantity cm3/ : 18.0...24.0
1000H.: (15.5...26.5)
Dispersion cm3/ : 4.50
1000H.: (7.50)

Remarks:

: MAN-NR. 2-7553

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 E
Edition : 12.12.86
Superceeded : 6.85
Calibrating oil : ISO-4113

Combination no. : 0 401 848 708

Injection pump
Pump designation : PE8P110A32OLS3802
EP type number : 0 411 818 705
Governor
Governor design. : RQ300/1150PA187-3
Governor no. : 0 421 801 133

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM422

1st version kW : 206.0
Speed 1/min: 2300
2nd version kW : 206
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing^oCS: 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 750

Contr.-rod trav.mm: 11.70...11.80

Del.quantity cm3/ : 11.3...11.5

 100H.: (11.0...11.7)

Dispersion cm3/ : 0.4

 100H.: (0.8)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.9...8.1
Del.quantity cm3/ : 1.5...2.1
 100H.: (1.2...2.3)
Dispersion cm3/ : 0.4
 100H.: (0.7)

1st speed 1/min: 1150
Contr.-rod trav.mm: 12.3...12.4
Del.quantity cm3/ : 12.7...12.9
 100H.: (-)
Dispersion cm3/ : 0.4
 100H.: (0.8)
2nd speed 1/min: 300
Contr.-rod trav.mm: 8.00...8.10
Del.quantity cm3/ : 1.5...2.1
 100H.: (-)

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 650
Contr.-rod travelmm: 13.00...14.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 750
Del.quantity cm3/ : 113.0...115.0
 1000H.: (110.5...117.5)

Dispersion cm3/ : 4.00
 1000H.: (8.00)
2nd version
Speed 1/min: 1150
Del.quantity cm3/ : 127.0...129.0
 1000H.: (124.0...132.0)
Dispersion cm3/ : 4.0
 1000H.: (8.0)

HIGHEST RATED SPEED

Setting point:
Speed 1/min : 650
Contr.-rod trav.mm: 13.5

Testing:
1st c-rod trav.mm : 10.70
Speed 1/min : 1195...1210
2nd c-rod trav.mm : 4.00
Speed 1/min : 1240...1270
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.50

Setting point:
Speed 1/min : 650
Contr.-rod trav.mm: 13.5

Testing:
1st c-rod trav.mm : 11.30
Speed 1/min : 1195...1210
2nd c-rod trav.mm : 4.00
Speed 1/min : 1235...1265
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 8.1

Testing:
Speed 1/min : 100
C-rod trav.mm min : 10.20
Speed 1/min : 300
C-rod trav.mm : 8.00...8.20
C-rod trav.mm : 2.00
Speed 1/min : 420...460
Speed 1/min : 550
C-rod trav.mm max : 1.80

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1150
Del.quantity cm3/ : 132.0...136.0
 1000H.: (129.0...139.0)
Dispersion cm3/ : 7.00
 1000H.: (10.0)
Speed 1/min : 600
Del.quantity cm3/ : 118.0...122.0
 1000H.: (115.0...125.0)

Dispersion cm3/ : 8.0
 1000H.: (11.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...150.0
 1000H.: (126.0...154.0)

Version 1: Without return-flow
restriction

Version 2: With return-flow restriction

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 E 4
 Edition : 13.05.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 848 708
 Injection pump
 Pump designation : PE8P110A32OLS3802-10
 EP type number : 0 411 818 710
 Governor
 Governor design. : RQ300/1150PA187-3
 Governor no. : 0 421 801 133

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM422

1st version kW : 206.0
 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 750

Contr.-rod trav.mm: 11.70...11.80

Del.quantity cm3/ : 11.3...11.5

100H.: (11.0...11.7)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.9...8.1

Del.quantity cm3/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 2.10...2.30

2nd speed 1/min: 650

Sleeve travel mm: 6.90...7.10

3rd speed 1/min: 1200

Sleeve travel mm: 7.30...7.70

4th speed 1/min: 1250

Sleeve travel mm: 9.30...10.30

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 650

Contr.-rod travelmm: 13.00...14.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 750

Del.quantity cm3/ : 113.0...115.0

1000H.: (110.5...117.5)

Dispersion cm3/ : 4.00
1000H.: (7.00)

HIGHEST RATED SPEED

Setting point:
Speed 1/min : 650
Contr.-rod trav.mm: 13.5

Testing:
1st c-rod trav.mm : 10.70
Speed 1/min : 1195...1210
2nd c-rod trav.mm : 4.00
Speed 1/min : 1240...1270
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 8.1

Testing:
Speed 1/min : 100
C-rod trav.mm min : 10.20
Speed 1/min : 300
C-rod trav.mm : 8.00...8.20
C-rod trav.mm : 2.00
Speed 1/min : 420...460
Speed 1/min : 550
C-rod trav.mm max : 1.80

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1150
Del.quantity cm3/ : 132.0...136.0
1000H.: (129.0...139.0)
Dispersion cm3/ : 7.00
1000H.: (10.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...150.0
1000H.: (126.0...154.0)

Remarks:

Remarks:
APPLICATION
Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 N 4
 Edition : 13.05.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 848 738
 Injection pump
 Pump designation : PE8P110A320LS3802-10
 EP type number : 0 411 818 710
 Governor
 Governor design. : RQ900PA310R
 Governor no. : 0 421 801 059

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 422

1st version kW : 180.0
 Speed 1/min: 1800

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 13.90...14.00

Del.quantity cm3/ : 15.2...15.4

100H.: (14.9...15.7)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.2...8.4

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.2)

Dispersion cm3/ : 0.4

100H.: (0.7)

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Del.quantity cm3/ : 152.0...154.0

1000H.: (149.0...157.0)

Dispersion cm3/ : 4.00

1000H.: (8.00)

HIGHEST RATED SPEED

Testing:

1st c-rod trav.mm : 12.90

Speed 1/min : 900...905

2nd c-rod trav.mm : 6.30

Speed 1/min : 940...950

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 140.0...160.0

1000H.: (136.0...164.0)

Remarks:
APPLICATION
Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 N 5
Edition : 13.05.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 848 739
Injection pump
Pump designation : PE8P110A320LS3802-10
EP type number : 0 411 818 710
Governor
Governor design. : RQ1050PA310
Governor no. : 0 421 801 108

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 422

1st version kW : 198.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 14.30...14.40

Del.quantity cm3/ : 15.9...16.1

100H.: (15.6...16.4)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.2...8.4

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.2)

Dispersion cm3/ : 0.4

100H.: (0.7)

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Del.quantity cm3/ : 159.0...161.0

1000H.: (156.0...164.0)

Dispersion cm3/ : 4.00

1000H.: (8.00)

HIGHEST RATED SPEED

Testing:

1st c-rod trav.mm : 13.30

Speed 1/min : 1050...1055

2nd c-rod trav.mm : 4.00

Speed 1/min : 1108...1118

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 140.0...160.0

1000H.: (136.0...164.0)

Remarks:
APPLICATION
Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 M 2
Edition : 27.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 401 848 740

Injection pump
Pump designation : PE8P110A32OLS3813-10
EP type number : 0 411 818 712
Governor
Governor design. : RQV350...115OPA378-6
Governor no. : 0 421 813 619

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM422

1st version kW : 206.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.50...11.60

Del.quantity cm3/ : 13.1...13.3

100H.: (12.8...13.5)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 7.4...7.6

Del.quantity cm3/ : 1.4...1.8

100H.: (1.1...2.0)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 350

Sleeve travel mm: 1.50...1.70

2nd speed 1/min: 500

Sleeve travel mm: 1.70...1.90

3rd speed 1/min: 800

Sleeve travel mm: 4.60...4.90

4th speed 1/min: 1175

Sleeve travel mm: 7.60...7.90

5th speed 1/min: 1300

Sleeve travel mm: 9.10...9.50

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1230

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Del.quantity cm3/ : 131.0...133.0
1000H.: (128.5...135.5)
Dispersion cm3/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 58...66

Testing:

1st c-rod trav.mm : 10.50
Speed 1/min : 1190...1200
2nd c-rod trav.mm : 4.00
Speed 1/min : 1280...1310
4th speed 1/min : 1400
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 10...18

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.70
Speed 1/min : 350
C-rod trav.mm : 7.40...7.60

CONSTANT REGULATION

Speed 1/min : 385...495

SWITCH-OVER POINT

Speed 1/min : 270 (290)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 109.0...113.0
1000H.: (106.0...116.0)
Dispersion cm3/ : 6.00
1000H.: (9.00)
Speed 1/min : 1150
Del.quantity cm3/ : 84.0...87.0 *
1000H.: (81.0...90.0)
Dispersion cm3/ : 6.00
1000H.: (9.00)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...160.0
1000H.: (136.0...164.0)

Remarks:

* = Set at reduced-delivery stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 A 4
Edition : 13.05.87
Superceeded : 5.11.86
Calibrating oil : ISO-4113

Combination no. : 0 401 848 755

Injection pump
Pump designation : PE8P110A320LS3802-10
EP type number : 0 411 818 710
Governor
Governor design. : RQ300/1150PA437-3
Governor no. : 0 421 801 230

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM422

1st version kW : 184.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing^oCS: 0-45-90-135-180-225-
 270-315
Tolerance + - ^o : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 750

Contr.-rod trav.mm: 11.30...11.40

2nd speed 1/min: 300.0
Contr.-rod trav. m: 8.5...8.7
Del.quantity cm3/ : 1.4...2.0
 100H.: (1.1...2.2)
Dispersion cm3/ : 0.4
 100H.: (0.7)

SLEEVE POSITION

Control-lever position
 Degree: -1
Speed 1/min: 650
Contr.-rod travelmm: 13.20...14.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 750

HIGHEST RATED SPEED

Setting point:
Speed 1/min : 650
Contr.-rod trav.mm: 13.6

Testing:
1st c-rod trav.mm : 10.00
 Speed 1/min : 1195...1210
2nd c-rod trav.mm : 4.00
 Speed 1/min : 1255...1285
4th speed 1/min : 1350
 C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 7.1

Testing:
Speed 1/min : 100
C-rod trav.mm min : 8.50

Speed 1/min : 300
C-rod trav.mm : 7.00...7.20
C-rod trav.mm : 2.00
Speed 1/min : 400...440

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1150
 C-rod trav.mm : 11.00...11.10
2nd speed 1/min : 600
 C-rod trav.mm : 11.20...11.40

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 92.0...96.0
 1000H.: (89.0...99.0)
Dispersion cm3/ : 6.00
 1000H.: (9.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...150.0
 1000H.: (126.0...154.0)

Remarks:

Del.quantity cm3/ : 214.0...216.0
1000H.: (211.0...219.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 56...64

Testing:
1st c-rod trav.mm : 11.60
Speed 1/min : 940...950
2nd c-rod trav.mm : 4.00
Speed 1/min : 1050...1080
4th speed 1/min : 1200
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 7...15

Testing:
Speed 1/min : 100
C-rod trav.mm min : 6.40
Speed 1/min : 300
C-rod trav.mm : 5.00...5.20

CONSTANT REGULATION

Speed 1/min : 310...415

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 12.60...12.70

Measurement
Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.00...9.30
2nd pressure hPa : 440
C-rod trav.mm : 11.60...11.70
3rd pressure hPa : 340
C-rod trav.mm : 9.60...10.00

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 900
Speed 1/min : 550
Del.quantity cm3/ : 229.0...237.0
1000H.: (226.0...240.0)
Charge press. hPa : -
Speed 1/min : 500

Del.quantity cm3/ : 133.0...135.0
1000H.: (130.0...138.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 170.0...200.0
1000H.: (166.0...204.0)

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 F 1
Edition : 09.03.87
Superceeded : 10.85
Calibrating oil : ISO-4113

Combination no. : 0 401 848 759

Injection pump
Pump designation : PE8P120A320LS3811-10
EP type number : 0 411 828 714
Governor
Governor design. : RQ300/1150PA556-1
Governor no. : 0 421 801 290

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM422A

1st version kW : 243.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values

START OF DELIVERY

```

Prestroke mm      : 4.00...4.10
                  : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence      : 8- 7- 2- 6- 3- 5-
                  : 4- 1

```

SD ang. spacing^oCS: 0-45-90-135-180-225-
270-315

Tolerance \pm : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 10.40...10.50

Del.quantity cm3/ : 16.0...16.2

100H.: (15.7...16.5)

Dispersion cm³/ : 0.5
100H.: (0.9)

```

2nd speed      1/min: 300.0
Contr.-rod trav. m: 5.1...5.3
Del.quantity   cm3/ : 1.4...2.2
                100H.: (1.1...2.5)
Dispersion     cm3/ : 0.8
                100H.: (1.2)

```

(B) Setting of injection pump with externally-mounted governor

SLEEVE TRAVELS

| | | |
|---------------|--------|-------------|
| 1st speed | 1/min: | 300 |
| Sleeve travel | mm: | 3.30...3.50 |
| 2nd speed | 1/min: | 650 |
| Sleeve travel | mm: | 6.90...7.10 |
| 3rd speed | 1/min: | 1200 |
| Sleeve travel | mm: | 7.20...7.60 |
| 4th speed | 1/min: | 1250 |
| Sleeve travel | mm: | 9.00...9.50 |

SLEEVE POSITION

```
Control-lever position
Degree: 108
Speed 17/min: 600
Cont.-rod travelmm: 14.60...16.40
```

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1150

Del.quantity cm3/ : 160.0...162.0
1000H.: (157.0...165.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600
Contr.-rod trav.mm: 15.5

Testing:

1st c-rod trav.mm : 9.40
Speed 1/min : 1195...1210
2nd c-rod trav.mm : 4.00
Speed 1/min : 1245...1275
4th speed 1/min : 1400
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 5.2

Testing:

Speed 1/min : 100
C-rod trav.mm min : 6.70
Speed 1/min : 300
C-rod trav.mm : 5.10...5.30
C-rod trav.mm : 2.00
Speed 1/min : 360...400

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 152.0...158.0
1000H.: (149.0...161.0)
Dispersion cm3/ : 8.00
1000H.: (12.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...160.0
1000H.: (136.0...164.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 Q 8
 Edition : 13.05.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 848 760
 Injection pump
 Pump designation : PE8P120A320LS3807-10
 EP type number : 0 411 828 713
 Governor
 Governor design. : RQ300/1150PA546-10
 Governor no. : 0 421 801 376

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 422 A

1st version kW : 243.0
 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 10.70...10.80

Del.quantity cm3/ : 15.9...16.1

100H.: (15.6...16.4)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 5.3...5.5

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.60...1.80

2nd speed 1/min: 650

Sleeve travel mm: 5.80...6.20

3rd speed 1/min: 1150

Sleeve travel mm: 6.20...6.30

4th speed 1/min: 1200

Sleeve travel mm: 6.50...6.80

5th speed 1/min: 1270

Sleeve travel mm: 8.50...9.00

SLEEVE POSITION

Control-lever position

Degree: 108

Speed 1/min: 600

Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150
Charge press. hPa : 700
Del. quantity cm3/ : 159.0...161.0
1000H.: (156.0...164.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600
Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 9.70
Speed 1/min : 1195...1210
2nd c-rod trav.mm : 4.00
Speed 1/min : 1255...1285
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 5.4

Testing:

Speed 1/min : 200
C-rod trav.mm min : 7.10
Speed 1/min : 300
C-rod trav.mm : 5.30...5.50
C-rod trav.mm : 2.00
Speed 1/min : 370...420

TORQUE CONTROL

Dimension a mm : 0.20
Torque-control curve - 1st version
1st speed 1/min : 1150
C-rod trav.mm : 10.70...10.80
2nd speed 1/min : 750
C-rod trav.mm : 11.00...11.20

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : -
Contr.-rod trav.mm: 10.00...10.30

Measurement

Speed 1/min : 500

1st pressure hPa : 450
C-rod trav.mm : 10.10...10.20
2nd pressure hPa : 500
C-rod trav.mm : 10.50...10.70

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700
Speed 1/min : 750
Del. quantity cm3/ : 173.5...175.5
1000H.: (170.5...178.5)
Dispersion cm3/ : 8.00
1000H.: (12.0)
Charge press. hPa : -
Speed 1/min : 500
Del. quantity cm3/ : 138.0...140.0
1000H.: (135.0...143.0)
Dispersion cm3/ : 8.00
1000H.: (12.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm3/ : 140.0...160.0
1000H.: (136.0...164.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 Q 7
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 848 761
Injection pump
Pump designation : PE8P120A32OLS3807-10
EP type number : 0 411 828 713
Governor
Governor design. : RQ300/1150PA546-9
Governor no. : 0 421 801 375

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM422 LA

1st version kW : 276.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.50...11.60

Del.quantity cm3/ : 17.5...17.7
 100H.: (17.2...18.0)

Dispersion cm3/ : 0.5
 100H.: (0.9)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 5.0...5.2
Del.quantity cm3/ : 1.2...2.0
 100H.: (0.9...2.3)
Dispersion cm3/ : 0.8
 100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 1.60...1.80
2nd speed 1/min: 600
Sleeve travel mm: 5.90...6.10
3rd speed 1/min: 1150
Sleeve travel mm: 6.20...6.30
4th speed 1/min: 1210
Sleeve travel mm: 6.50...6.80
5th speed 1/min: 1270
Sleeve travel mm: 8.50...9.00

SLEEVE POSITION

Control-lever position
Degree: 108
Speed 1/min: 600
Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

D10

1st version

Speed 1/min: 1150
Charge press. hPa : 700
Del.quantity cm3/ : 175.0...177.0
 1000H.: (172.0...180.0)
Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600
Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 10.50
Speed 1/min : 1195...1210
2nd c-rod trav.mm : 4.00
Speed 1/min : 1255...1285
4th speed 1/min : 1400
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 5.1

Testing:

Speed 1/min : 200
C-rod trav.mm min : 7.10
Speed 1/min : 300
C-rod trav.mm : 5.00...5.20
C-rod trav.mm : 2.00
Speed 1/min : 365...415

TORQUE CONTROL

Dimension a mm : 0.20
Torque-control curve - 1st version
1st speed 1/min : 1150
C-rod trav.mm : 11.50...11.60
2nd speed 1/min : 750
C-rod trav.mm : 11.80...12.00

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : -
Contr.-rod trav.mm: 10.20...10.40

Measurement

Speed 1/min : 500
1st pressure hPa : 410
C-rod trav.mm : 10.50...10.60
2nd pressure hPa : 490
C-rod trav.mm : 11.10...11.40

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 750

Del. quantity cm3/ : 187.0...190.0

1000H.: (184.0...193.0)

Dispersion cm3/ : 8.00

1000H.: (12.0)

Charge press. hPa : -

Speed 1/min : 500

Del. quantity cm3/ : 137.0...139.0

1000H.: (134.0...142.0)

Dispersion cm3/ : 8.00

1000H.: (12.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del. quantity cm3/ : 140.0...160.0

1000H.: (136.0...164.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 K 8
 Edition : 30.03.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 848 762
 Injection pump
 Pump designation : PE8P120A320LS3807-10
 EP type number : 0 411 828 713
 Governor
 Governor design. : RQV300...1150PAS45-7
 Governor no. : 0 421 813 595

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 422 A

1st version kW : 243.0
 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values _ _ _ _

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing^oCS: 0-45-90-135-180-225-
270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 10.70...10.80

Del.quantity cm3/ : 15.9...16.1

100H.: (15.6...16.4)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 5.0...5.2

Del.quantity cm3/ : 1.2...1.8
100H.: (0.9...2.1)

Dispersion cm3/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor**SLEEVE TRAVELS**

1st speed 1/min: 300

Sleeve travel mm: 1.60...1.80

2nd speed 1/min: 800

Sleeve travel mm: 6.00...6.20

3rd speed 1/min: 1200

Sleeve travel mm: 8.00...8.20

4th speed 1/min: 1300

Sleeve travel mm: 9.00...9.50

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1190

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

D13

Speed 1/min: 1150

Charge press. hPa : 700

Del.quantity cm3/ : 159.0...161.0
1000H.: (156.0...164.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 46...54

Testing:

1st c-rod trav.mm : 9.70

Speed 1/min : 1190...1200

2nd c-rod trav.mm : 4.00

Speed 1/min : 1270...1300

4th speed 1/min : 1400

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 15...23

Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.70

Speed 1/min : 300

C-rod trav.mm : 5.00...5.20

CONSTANT REGULATION

Speed 1/min : 300...400

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1150

C-rod trav.mm : 10.70...10.80

2nd speed 1/min : 750

C-rod trav.mm : 11.00...11.20

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : -

Contr.-rod trav.mm: 10.00...10.30

Measurement

Speed 1/min : 500

1st pressure hPa : 450

C-rod trav.mm : 10.10...10.20

2nd pressure hPa : 500

C-rod trav.mm : 10.50...10.70

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 750

Del. quantity cm3/ : 173.5...175.5

1000H.: (170.5...178.5)

Dispersion cm3/ : 7.00

1000H.: (12.0)

Charge press. hPa : 700

Charge press. hPa : -

Speed 1/min : 500

Del. quantity cm3/ : 138.0...140.0

1000H.: (135.0...143.0)

Dispersion cm3/ : 7.00

1000H.: (12.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del. quantity cm3/ : 140.0...160.0

1000H.: (136.0...164.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 R
Edition : 13.05.87
Superceeded : 10.85
Calibrating oil : ISO-4113

Combination no. : 0 401 848 764

Injection pump
Pump designation : PE8P110A32OLS3813-10
EP type number : 0 411 818 712
Governor
Governor design. : RQ300/1150PA187-3
Governor no. : 0 421 801 133

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM422

1st version kW : 206.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing^oCS: 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.70...11.80

Del.quantity cm3/ : 13.2...13.4

 100H.: (13.0...13.7)

Dispersion cm3/ : 0.4

 100H.: (0.8)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.9...8.1
Del.quantity cm3/ : 1.5...2.1
 100H.: (1.2...2.3)
Dispersion cm3/ : 0.4
 100H.: (0.7)

SLEEVE POSITION

Control-lever position
 Degree: -1
Speed 1/min: 650
Contr.-rod travelmm: 13.00...14.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1150
Del.quantity cm3/ : 132.5...134.5
 1000H.: (130.0...137.0)
Dispersion cm3/ : 4.00
 1000H.: (8.00)

HIGHEST RATED SPEED

Setting point:
Speed 1/min : 650
Contr.-rod trav.mm: 13.5

Testing:
1st c-rod trav.mm : 10.70
Speed 1/min : 1195...1210
2nd c-rod trav.mm : 4.00

Speed 1/min : 1240...1270
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 8.0

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.60
Speed 1/min : 300
C-rod trav.mm : 7.90...8.10
C-rod trav.mm : 2.00
Speed 1/min : 420...460

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 109.5...115.5
 1000H.: (106.5...118.5)
Dispersion cm3/ : 8.00
 1000H.: (11.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...150.0
 1000H.: (126.0...154.0)

Remarks:

Speed 1/min: 1150
Charge press. hPa : 700
Del.quantity cm3/ : 159.0...161.0
1000H.: (156.0...164.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

Setting point:
Speed 1/min : 600
Contr.-rod trav.mm: 20.0

Testing:
1st c-rod trav.mm : 9.70
Speed 1/min : 1195...1210
2nd c-rod trav.mm : 4.00
Speed 1/min : 1250...1280
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 5.0

Testing:
Speed 1/min : 100
C-rod trav.mm min : 6.60
Speed 1/min : 300
C-rod trav.mm : 4.90...5.10
C-rod trav.mm : 2.00
Speed 1/min : 365...415

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1150
C-rod trav.mm : 10.70...10.80
2nd speed 1/min : 750
C-rod trav.mm : 10.90...11.10

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : -
Contr.-rod trav.mm: 10.00...10.30

Measurement

Speed 1/min : 500
1st pressure hPa : 450
C-rod trav.mm : 10.10...10.20
2nd pressure hPa : 500
C-rod trav.mm : 10.50...10.70

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 700
Speed 1/min : 750
Del.quantity cm3/ : 173.5...175.5
1000H.: (170.5...178.5)
Dispersion cm3/ : 7.00
1000H.: (11.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 138.0...140.0
1000H.: (135.0...143.0)
Dispersion cm3/ : 7.00
1000H.: (11.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...160.0
1000H.: (136.0...164.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14.7 D 1
Edition : 10.12.86
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 848 782
Injection pump
Pump designation : PE8P110A320LS3842
EP type number : 0 411 818 714
Governor
Governor design. : RQV300...950PA829-1K
Governor no. : 0 421 815 167

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 206.0
Speed 1/min: 1900

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing^oCS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 950

Contr.-rod trav.mm: 13.50...13.60

Del.quantity cm3/ : 13.3...13.5

100H.: (13.0...13.7)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.8...9.0

Del.quantity cm3/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.10...1.30

2nd speed 1/min: 500

Sleeve travel mm: 3.20...3.40

3rd speed 1/min: 800

Sleeve travel mm: 5.90...6.10

4th speed 1/min: 1000

Sleeve travel mm: 8.00...8.40

5th speed 1/min: 1125

Sleeve travel mm: 9.60...10.00

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 975

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 950

Del.quantity cm3/ : 133.0...135.0
1000H.: (130.5...137.5)

Dispersion cm3/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 57...65

Testing:

1st c-rod trav.mm : 12.50

Speed 1/min : 990...1000

2nd c-rod trav.mm : 4.00

Speed 1/min : 1095...1125

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever

position degrees: 14...22

Testing:

Speed 1/min : 100

C-rod trav.mm min : 10.50

Speed 1/min : 300

C-rod trav.mm : 8.80...9.00

CONSTANT REGULATION

Speed 1/min : 300...450

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 950

C-rod trav.mm : 13.50...13.60

2nd speed 1/min : 600

C-rod trav.mm : 12.90...13.10

3rd speed 1/min : 750

C-rod trav.mm : 13.20...13.40

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm3/ : 118.0...121.0

1000H.: (115.0...124.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

Speed 1/min : 750

Del.quantity cm3/ : 122.0...126.0

1000H.: (119.0...129.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 120.0...140.0
1000H.: (116.0...144.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 D 3
Edition : 13.05.87
Superceeded : 28.10.86
Calibrating oil : ISO-4113

Combination no. : 0 401 848 784

Injection pump
Pump designation : PE8P110A32OLS3842
EP type number : 0 411 818 714
Governor
Governor design. : RQV300...950PA524-11
Governor no. : 0 421 813 578

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 191.0
Speed 1/min: 1900

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing^oCS: 0-45-90-135-180-225-
 270-315

Tolerance + - ^o : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 950

Contr.-rod trav.mm: 12.00...12.10

Del.quantity cm3/ : 11.8...12.0

100H.: (11.5...12.2)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.3...8.5

Del.quantity cm3/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.00...1.20

2nd speed 1/min: 550

Sleeve travel mm: 4.90...5.10

3rd speed 1/min: 1000

Sleeve travel mm: 8.20...8.50

4th speed 1/min: 1050

Sleeve travel mm: 9.10...9.40

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1000

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 950

Del.quantity cm3/ : 118.0...120.0

1000H.: (115.5...122.5)

Dispersion cm3/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 51...59

Testing:

1st c-rod trav.mm : 11.00

Speed 1/min : 990...1000

2nd c-rod trav.mm : 4.00

Speed 1/min : 1050...1080

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever

position degrees: 18...26

Testing:

Speed 1/min : 100

C-rod trav.mm min : 10.00

Speed 1/min : 300

C-rod trav.mm : 8.30...8.50

CONSTANT REGULATION

Speed 1/min : 300...450

SWITCH-OVER POINT

Speed 1/min : 270 (290)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm3/ : 108.0...112.0

1000H.: (105.0...115.0)

Dispersion cm3/ : 6.00

1000H.: (11.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 120.0...140.0

1000H.: (116.0...144.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 C 2
Edition : 13.05.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 848 786
Injection pump
Pump designation : PE8P110A32OLS3842
EP type number : 0 411 818 714
Governor
Governor design. : RQ300/1050PA827-3K
Governor no. : 0 421 803 095

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 213.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 12.90...13.00

Del. quantity cm3/ : 13.2...13.4

100H.: (12.9...13.6)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.8...9.0

Del. quantity cm3/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.60...1.80

2nd speed 1/min: 500

Sleeve travel mm: 5.50...5.70

3rd speed 1/min: 900

Sleeve travel mm: 7.00...7.30

4th speed 1/min: 1050

Sleeve travel mm: 7.60...7.90

5th speed 1/min: 1100

Sleeve travel mm: 9.50...10.00

SLEEVE POSITION

Control-lever position

Degree: 108

Speed 1/min: 600

Contr.-rod travelmm: 16.30...17.30

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1050

Del.quantity cm3/ : 132.0...134.0
1000H.: (129.5...136.5)
Dispersion cm3/ : 4.00
1000H.: (8.00)

Remarks:

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600
Contr.-rod trav.mm: 16.8

Testing:

1st c-rod trav.mm : 11.90
Speed 1/min : 1095...1110
2nd c-rod trav.mm : 4.00
Speed 1/min : 1160...1190
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 8.9

Testing:

Speed 1/min : 100
C-rod trav.mm min : 10.00
Speed 1/min : 300
C-rod trav.mm : 8.80...9.00
C-rod trav.mm : 2.00
Speed 1/min : 400...440

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1050
C-rod trav.mm : 12.90...13.00
2nd speed 1/min : 600
C-rod trav.mm : 12.80...13.00
3rd speed 1/min : 750
C-rod trav.mm : 13.20...13.40

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 119.0...122.0
1000H.: (116.0...125.0)
Dispersion cm3/ : 8.00
1000H.: (11.0)
Speed 1/min : 900
Del.quantity cm3/ : 130.0...134.0
1000H.: (127.0...137.0)
Dispersion cm3/ : 8.00
1000H.: (-)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...160.0
1000H.: (136.0...164.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 E 3
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 401 848 787

Injection pump
Pump designation : PE8P110A320LS3802-10
EP type number : 0 411 818 710
Governor
Governor design. : RQ300/1150PA187-16
Governor no. : 0 421 801 385

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM422

1st version kW : 191.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4 1

SD ang. spacing^oCS: 0-45-90-135-180-225-
 270-315
Tolerance + - ^o : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm3/ : 11.9...12.1

 100H.: (11.6...12.3)

Dispersion cm3/ : 0.4

 100H.: (0.8)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 8.0...8.2
Del.quantity cm3/ : 1.5...2.1
 100H.: (1.2...2.3)
Dispersion cm3/ : 0.4
 100H.: (0.7)

SLEEVE POSITION

Control-lever position
 Degree: -1
Speed 1/min: 650
Contr.-rod travelmm: 13.00...14.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1150
Del.quantity cm3/ : 119.0...121.0
 1000H.: (116.5...123.5)
Dispersion cm3/ : 4.00
 1000H.: (8.00)

HIGHEST RATED SPEED

Setting point:
Speed 1/min : 650
Contr.-rod trav.mm: 13.5

Testing:
1st c-rod trav.mm : 10.00
Speed 1/min : 1195...1210
2nd c-rod trav.mm : 4.00

Speed 1/min : 1240...1270
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 8.1

Testing:

Speed 1/min : 100
C-rod trav.mm min : 10.20
Speed 1/min : 300
C-rod trav.mm : 8.00...8.20
C-rod trav.mm : 2.00
Speed 1/min : 420...460
Speed 1/min : 550
C-rod trav.mm max : 1.80

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 93.0...97.0
 1000H.: (90.0...100.0)
Dispersion cm3/ : 8.00
 1000H.: (11.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...150.0
 1000H.: (126.0...154.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 W
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 401 848 788

Injection pump
Pump designation : PE8P120A32OLS3816-11
EP type number : 0 411 828 720
Governor
Governor design. : RQV350...1150PA854
Governor no. : 0 421 813 602

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM422A

1st version kW : 243.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm3/ : 15.8...16.0

 100H.: (15.5...16.3)

Dispersion cm3/ : 0.5

 100H.: (0.9)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 4.9...5.1
Del.quantity cm3/ : 1.2...1.8
 100H.: (0.9...2.1)
Dispersion cm3/ : 0.8
 100H.: (1.2)

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1150
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1150
Charge press. hPa : 700
Del.quantity cm3/ : 158.0...160.0
 1000H.: (155.0...163.0)
Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 59...67

Testing:

1st c-rod trav.mm : 10.00
Speed 1/min : 1190...1200
2nd c-rod trav.mm : 4.00
Speed 1/min : 1270...1300
4th speed 1/min : 1400
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 6...14

Testing:

Speed 1/min : 100
C-rod trav.mm min : 6.00
Speed 1/min : 350
C-rod trav.mm : 4.90...5.10

CONSTANT REGULATION

Speed 1/min : 370...480

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1050
C-rod trav.mm : 11.00...11.10
2nd speed 1/min : 850
C-rod trav.mm : 11.20...11.40
3rd speed 1/min : 750
C-rod trav.mm : 11.30...11.50

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 700
Contr.-rod trav.mm: 11.50...11.70

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 10.50...10.60
2nd pressure hPa : 470
C-rod trav.mm : 11.40...11.50
3rd pressure hPa : 400
C-rod trav.mm : 10.90...11.00

SWITCH-OVER POINT

Speed 1/min : 270 (290)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700
Speed 1/min : 600
Del.quantity cm3/ : 166.0...172.0
1000H.: (163.0...175.0)
Dispersion cm3/ : 8.00
1000H.: (12.0)

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 140.0...142.0
1000H.: (137.0...145.0)
Dispersion cm3/ : 8.00
1000H.: (-)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 150.0...170.0
1000H.: (146.0...174.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 15,8 F
Edition : 09.03.87
Superceeded : 3.85
Calibrating oil : ISO-4113

Combination no. : 0 401 849 703

Injection pump
Pump designation : PE10P110A920/SL3073
EP type number : 0 411 819 701
Governor
Governor design. : RQV300...1150PA549
Governor no. : 0 421 813 277

Customer-spec. information
Customer : KHD

Engine : BF10L413F

1st version kW : 265.0
Speed 1/min: 2050

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1-10- 9- 4- 3- 6-
5- 8- 7- 2

SD ang. spacing^oCS: 0-27-72-99-144-171-2
16-243-288-315

Tolerance + - ^o : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.00...12.10

Del.quantity cm3/ : 14.4...14.6

100H.: (14.1...14.9)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.9...7.1

Del.quantity cm3/ : 1.8...2.4

100H.: (-)

Dispersion cm3/ : 0.4

100H.: (0.7)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1220

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm3/ : 144.0...146.0

1000H.: (141.0...149.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 60...68

Testing:

1st c-rod trav.mm : 11.00

Speed 1/min : 1190...1200

2nd c-rod trav.mm : 4.00

Speed 1/min : 1270...1300

4th speed 1/min : 1400

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 20...28

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.40

Speed 1/min : 300

C-rod trav.mm : 6.90...7.10

CONSTANT REGULATION

Speed 1/min : 300...500

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 700

C-rod trav.mm : 12.00...12.10

2nd speed 1/min : 1150

C-rod trav.mm : 10.70...10.90

3rd speed 1/min : 1050

C-rod trav.mm : 11.10...11.20

4th speed 1/min : 1025

C-rod trav.mm : 11.20...11.40

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 12.00...12.10

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 10.00...10.20

2nd pressure hPa : 500

C-rod trav.mm : 11.50...11.60

3rd pressure hPa : 350

C-rod trav.mm : 10.40...10.60

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 98.0...102.0

1000H.: (95.0...105.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 130.0...160.0

1000H.: (-)

Remarks:

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Maxidyne

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 18,3 D 1
 Edition : 13.05.87
 Superceeded : 28.10.86
 Calibrating o.l : ISO-4113
 Combination no. : 0 401 849 709
 Injection pump
 Pump designation : PE10P110A32OLS3818-1
 EP type number : 0 411 819 703
 Governor
 Governor design. : RQV350...1150PA678
 Governor no. : 0 421 813 402

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 423

1st version kW : 261.0
 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 130...150

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 10- 9- 4- 1- 8- 7
 - 6- 3- 5- 2

SD ang. spacing°CS: 0-45-72-117-144-189-
 216-261-288-333

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 10

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 12.20...12.30

Del.quantity cm3/ : 12.6...12.8

100H.: (12.3...13.0)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 8.5...8.7

Del.quantity cm3/ : 1.4...2.2

100H.: (1.1...2.4)

Dispersion cm3/ : 0.4

100H.: (0.7)

SLEEVE POSITION

Speed 1/min: 1200

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Del.quantity cm3/ : 126.0...128.0

1000H.: (123.5...130.5)

Dispersion cm3/ : 4.00

1000H.: (8.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 60...68

Testing:

1st c-rod trav.mm : 11.20

Speed 1/min : 1190...1200

2nd c-rod trav.mm : 4.00

Speed 1/min : 1240...1270

4th speed 1/min : 1400

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 10...18

Testing:

Speed 1/min : 100

C-rod trav.mm min : 10.20

Speed 1/min : 350

C-rod trav.mm : 8.50...8.70

CONSTANT REGULATION

Speed 1/min : 350...500

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1150

C-rod trav.mm : 12.20...12.30

2nd speed 1/min : 600

C-rod trav.mm : 12.80...13.00

3rd speed 1/min : 900

C-rod trav.mm : 12.60...12.80

SWITCH-OVER POINT

Speed 1/min : 270 (290)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm3/ : 116.0...120.0

1000H.: (113.0...123.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

Speed 1/min : 900

Del.quantity cm3/ : 122.0...127.0

1000H.: (119.0...130.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

Speed 1/min : 1150

Del.quantity cm3/ : 92.0...94.0 *

1000H.: (89.0...97.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 150.0...170.0

1000H.: (146.0...174.0)

Remarks:

* = Set at reduced-delivery stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 15,8 Q
 Edition : 13.05.87
 Superseded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 849 728
 Injection pump
 Pump designation : PE10P110A920/5LS3138
 EP type number : 0 411 819 707
 Governor
 Governor design. : RQV425....900PA814
 Governor no. : 0 421 813 558

Customer-spec. information
 Customer : KHD

Engine : F10L513 OPT.

1st version kW : 188.0
 Speed 1/min: 1800

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.10...3.20
 : (3.05...3.25)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1-10- 9- 4- 3- 6-
 5- 8- 7- 2

SD ang. spacing°CS: 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 900

Contr.-rod trav.mm: 10.40...10.50

Del.quantity cm3/ : 9.4...9.6

100H.: (9.1...9.9)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 425.0

Contr.-rod trav. m: 5.9...6.1

Del.quantity cm3/ : 1.2...1.8

100H.: (0.9...2.0)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 425

Sleeve travel mm: 1.50...1.60

2nd speed 1/min: 460

Sleeve travel mm: 2.70...3.10

3rd speed 1/min: 500

Sleeve travel mm: 3.20...3.50

4th speed 1/min: 950

Sleeve travel mm: 8.40...8.60

5th speed 1/min: 1010

Sleeve travel mm: 9.50...9.70

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 950

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 900

Del.quantity cm3/ : 94.0...96.0

1000H.: (91.0...99.0)

Dispersion cm3/ : 4.00
1000H.: (7.50)

APPLICATION
Compressor

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 50...58

Testing:

1st c-rod trav.mm : 9.40

Speed 1/min : 940...950

2nd c-rod trav.mm : 4.00

Speed 1/min : 980...1010

4th speed 1/min : 1150

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 14...22

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.40

Speed 1/min : 425

C-rod trav.mm : 5.90...6.10

CONSTANT REGULATION

Speed 1/min : 435...490

TORQUE CONTROL

Dimension a mm : 0.30

Torque-control curve - 1st version

1st speed 1/min : 900

C-rod trav.mm : 10.40...10.50

2nd speed 1/min : 550

C-rod trav.mm : 10.70...10.80

3rd speed 1/min : 675

C-rod trav.mm : 10.70...10.80

4th speed 1/min : 750

C-rod trav.mm : 10.60...10.70

SWITCH-OVER POINT

Speed 1/min : 340 (360)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 675

Del.quantity cm3/ : 96.0...100.0

1000H.: (94.0...102.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 135.0...165.0

1000H.: (131.0...169.0)

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 15,8 0
Edition : 09.03.87
Superceeded : 12.9.86
Calibrating oil : ISO-4113

Combination no. : 0 401 849 729

Injection pump
Pump designation : PE10P110A920/SLS3073
EP type number : 0 411 819 701
Governor
Governor design. : RQV300...1150PA816
Governor no. : 0 421 813 559

Customer-spec. information
Customer : KHD

Engine : BF10L413F

1st version kW : 252.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1-10- 9- 4- 3- 6-
5- 8- 7- 2

SD ang. spacing°CS: 0-27-72-99-144-171-2
16-243-288-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 10.80...10.90

Del.quantity cm3/ : 12.4...12.6

100H.: (12.1...12.9)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.7...6.9

Del.quantity cm3/ : 1.4...1.9

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.30...1.40

2nd speed 1/min: 390

Sleeve travel mm: 2.40...2.80

3rd speed 1/min: 450

Sleeve travel mm: 2.80...3.20

4th speed 1/min: 1180

Sleeve travel mm: 8.30...8.40

5th speed 1/min: 1260

Sleeve travel mm: 9.10...9.30

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1190

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Charge press. hPa : 700

Del.quantity cm3/ : 124.0...126.0

1000H.: (121.0...129.0)

Dispersion cm3/ : 4.00
1000H.: (7.50)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 59...67

Testing:

1st c-rod trav.mm : 9.80
Speed 1/min : 1180...1190
2nd c-rod trav.mm : 4.00
Speed 1/min : 1265...1295
4th speed 1/min : 1400
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 15...23

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.20
Speed 1/min : 300
C-rod trav.mm : 6.70...6.90

CONSTANT REGULATION

Speed 1/min : 320...480

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 700
Contr.-rod trav.mm: 10.80...10.90

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.90...10.00
2nd pressure hPa : 355
C-rod trav.mm : 10.60...10.70
3rd pressure hPa : 310
C-rod trav.mm : 10.10...10.30

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700
Speed 1/min : 800
Del.quantity cm3/ : 119.0...123.0
1000H.: (116.0...126.0)
Charge press. hPa : -
Speed 1/min : 500

Del.quantity cm3/ : 98.0...102.0
1000H.: (96.0...104.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...160.0

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Excavator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 18,3 E 4
 Edition : 16.06.87
 Superceeded : 5.11.86
 Calibrating oil : ISO-4113
 Combination no. : 0 401 849 733
 Injection pump
 Pump designation : PE10P120A320LS3824-10
 EP type number : 0 411 829 701
 Governor
 Governor design. : RQ300/1150PA546-9
 Governor no. : 0 421 801 371

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 423 LA

1st version kW : 301.0
 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 130...150

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 10- 9- 4- 1- 8- 7
 - 6- 3- 5- 2

SD ang. spacing°CS: 0-45-72-117-144-189-
 216-261-288-333

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 10

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm3/ : 15.2...15.4

100H.: (14.9...15.7)

Dispersion cm3/ : 0.5

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 5.0...5.2

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 100

Sleeve travel mm: 0.00...0.50

2nd speed 1/min: 300

Sleeve travel mm: 2.60...2.70

3rd speed 1/min: 600

Sleeve travel mm: 5.90...6.00

4th speed 1/min: 1150

Sleeve travel mm: 5.90...6.00

SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 600

Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150
Charge press. hPa : 700
Del.quantity cm3/ : 152.0...154.0
1000H.: (149.0...157.0)
Dispersion cm3/ : 5.00
1000H.: (8.00)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600
Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 10.10
Speed 1/min : 1195...1210
2nd c-rod trav.mm : 4.00
Speed 1/min : 1250...1280
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 6...14

Testing:

Speed 1/min : 100
C-rod trav.mm min : 6.50
Speed 1/min : 300
C-rod trav.mm : 5.00...5.20
C-rod trav.mm : 2.00
Speed 1/min : 360...400

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1150
C-rod trav.mm : 11.00...11.10
2nd speed 1/min : 750
C-rod trav.mm : 11.60...11.80

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : -
Contr.-rod trav.mm: 10.40...10.60

Measurement

Speed 1/min : 500

1st pressure hPa : 360
C-rod trav.mm : 10.50...10.60
2nd pressure hPa : 420
C-rod trav.mm : 10.90...11.10

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700
Speed 1/min : 750
Del.quantity cm3/ : 169.0...172.0
1000H.: (166.0...175.0)
Dispersion cm3/ : 8.00
1000H.: (12.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 134.0...136.0
1000H.: (131.0...139.0)
Dispersion cm3/ : 8.00
1000H.: (12.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 150.0...170.0
1000H.: (146.0...174.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 18,3 E 5
 Edition : 30.03.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 849 736
 Injection pump
 Pump designation : PE10P120A32OLS3824-1
 EP type number : 0 411 829 701
 Governor
 Governor design. : RQ300/10S0PA859
 Governor no. : 0 421 801 394

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 423 LA

1st version kW : 368,0
 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 130...150

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 10- 9- 4- 1- 8- 7
 - 6- 3- 5- 2

SD ang. spacing^oCS: 0-45-72-117-144-189-
 216-261-288-333
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 10

BASIC SETTING

1st speed 1/mi: 1150

 Contr.-rod trav.mm: 11.70...11.80

 Del.quantity cm3/ : 18.3...18.5

 100H.: (18.0...18.8)

 Dispersion cm3/ : 0.5

 100H.: (0.8)

 2nd speed 1/min: 300.0
 Contr.-rod trav. m: 5.0...5.2
 Del.quantity cm3/ : 1.6...2.2
 100H.: (1.3...2.5)
 Dispersion cm3/ : 0.8
 100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor**SLEEVE TRAVELS**

1st speed 1/min: 100
 Sleeve travel mm: 0.10...0.50
 2nd speed 1/min: 300
 Sleeve travel mm: 2.50...2.80
 3rd speed 1/min: 600
 Sleeve travel mm: 5.90...6.00
 4th speed 1/min: 1200
 Sleeve travel mm: 6.20...6.60
 5th speed 1/min: 1270
 Sleeve travel mm: 8.80...9.20

SLEEVE POSITION

Control-lever position
 Degree: 108
 Speed 1/min: 600
 Cont.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150
 Charge press. hPa : 700
 Del.quantity cm3/ : 183.0...185.0
 1000H.: (180.0...188.0)
 Dispersion cm3/ : 5.00
 1000H.: (8.00)

HIGHEST RATED SPEED

Setting point:
 Speed 1/min : 600
 Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 10.70
 Speed 1/min : 1195...1210
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1245...1275
 4th speed 1/min : 1350
 C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring
 Speed 1/min : 300
 Contr.-rod trav.mm: 5.1

Testing:

Speed 1/min : 100
 C-rod trav.mm min : 6.50
 Speed 1/min : 300
 C-rod trav.mm : 5.00...5.20
 C-rod trav.mm : 2.00
 Speed 1/min : 360...400

compensator (LDA, ADA, ALDA)

1st version

Setting
 Speed 1/min : 500
 Pressure hPa : 700
 Contr.-rod trav.mm: 11.70...11.80

Measurement

Speed 1/min : 500
 1st pressure hPa : -
 C-rod trav.mm : 10.00...10.20
 2nd pressure hPa : 390
 C-rod trav.mm : 10.40...10.60
 3rd pressure hPa : 520
 C-rod trav.mm : 11.40...11.50

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 700
Speed 1/min : 750
Del.quantity cm3/ : 186.0...192.0
1000H.: (183.0...195.0)
Dispersion cm3/ : 8.00
1000H.: (12.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 138.0...141.0
1000H.: (135.0...144.0)
Dispersion cm3/ : 8.00
1000H.: (12.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 150.0...170.0
1000H.: (146.0...174.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : STE 10,0 D2
Edition : 09.03.87
Superceeded : 10.83
Calibrating oil : ISO-4113

Combination no. : 0 401 856 155

Injection pump
Pump designation : PE6P110A321RS157-1
EP type number : 0 411 816 157
Governor
Governor design. : RQ250...1100PA692
Governor no. : 0 421 801 240

Customer-spec. information
Customer : STEYR

Engine : 9 FU-A

1st version kW : 184.0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
: (1.95...2.15)
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 10.20...10.30

Del.quantity cm3/ : 13.4...13.6

100H.: (13.1...13.9)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 5.9...6.1

Del.quantity cm3/ : 1.7...2.2

Dispersion cm3/ : 0.4

100H.: (0.7)

SLEEVE POSITION

Control-lever position

Degree: 101

Speed 1/min: 600

Contr.-rod travelmm: 15.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Charge press. hPa : 700

Del.quantity cm3/ : 134.0...136.0

1000H.: (131.0...139.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 9.20

Speed 1/min : 1145...1160

2nd c-rod trav.mm : 4.00

Speed 1/min : 1200...1230

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.40

Speed 1/min : 250

C-rod trav.mm : 5.90...6.10

C-rod trav.mm : 2.00

Speed 1/min : 335...375

TORQUE CONTROL

Dimension ø mm : 0.55

Torque-control curve - 1st version

1st speed 1/min : 1100

C-rod trav.mm : 10.20...10.30

2nd speed 1/min : 900

C-rod trav.mm : 10.70...10.90

3rd speed 1/min : 700

C-rod trav.mm : 11.10...11.30

4th speed 1/min : 550

C-rod trav.mm : 11.30...11.50

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 700

Contr.-rod trav.mm: 10.70...10.90

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 9.50...9.60

2nd pressure hPa : 520

C-rod trav.mm : 10.50...10.60

3rd pressure hPa : 420

C-rod trav.mm : 9.80...10.00

SWITCH-OVER POINT

Speed 1/min : 170 (190)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 550

Del.quantity cm3/ : 138.0...142.0

1000H.: (135.0...145.0)

Speed 1/min : 500

Del.quantity cm3/ : 106.0...110.0

1000H.: (103.0...113.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...160.0

Remarks:
APPLICATION
Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : STE 10,0 D3
 Edition : 09.03.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 856 157
 Injection pump
 Pump designation : PE6P110A321RS157-1
 EP type number : 0 411 816 157
 Governor
 Governor design. : RQ250...1100PA692-1
 Governor no. : 0 421 801 393

Customer-spec. information
 Customer : STEYR

Engine : 9 FU-A

1st version kW : 206.0
 Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Contr.-rod trav,mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav,mm: 11.10...11.20

Del.quantity cm3/ : 14.5...14.7

100H.: (14.2...15.0)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.2...6.4

Del.quantity cm3/ : 1.3...1.8

100H.: (-)

Dispersion cm3/ : 0.4

100H.: (0.7)

SLEEVE POSITION

Control-lever position

Degree: 45...47

Speed 1/min: 600

Cont.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Charge press. hPa : 700

Del.quantity cm3/ : 145.0...147.0

1000H.: (142.0...150.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav,mm: 20.0

Testing:

1st c-rod trav,mm : 10.10

Speed 1/min : 1145...1160

2nd c-rod trav,mm : 4.00

Speed 1/min : 1205...1235

4th speed 1/min : 1350

C-rod trav,mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.3

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.70

Speed 1/min : 250

C-rod trav.mm : 6.20...6.40

C-rod trav.mm : 2.00

Speed 1/min : 340...380

TORQUE CONTROL

Dimension a mm : 0.50

Torque-control curve - 1st version

1st speed 1/min : 1100

C-rod trav.mm : 11.10...11.20

2nd speed 1/min : 500

C-rod trav.mm : 12.20...12.30

3rd speed 1/min : 840

C-rod trav.mm : 11.30...11.50

4th speed 1/min : 720

C-rod trav.mm : 12.00...12.20

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 700

Contr.-rod trav.mm: 12.20...12.30

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 8.70...8.90

2nd pressure hPa : 380

C-rod trav.mm : 11.50...11.60

3rd pressure hPa : 135

C-rod trav.mm : 9.80...10.00

SWITCH-OVER POINT

Speed 1/min : 170 (190)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 500

Del.quantity cm3/ : 161.0...165.0

1000H.: (158.0...168.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 84.0...88.0

1000H.: (81.0...91.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 155.0...185.0

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,0 R4
Edition : 26.6.87
Superceeded : 1.85
Calibrating oil : ISO-4113

Combination no. : 0 401 876 720

Injection pump
Pump designation : PE6P110A72ORS3040
EP type number : 0 411 816 713
Governor
Governor design. : RSV350...1100P1/481
Governor no. : 0 421 833 121

Customer-spec. information
Customer : SCANIA

Engine : DS11 05

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.30...3.40
: (3.25...3.45)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5-3-6-2-4

SD ang. spacing°CS: 0-60-120-180-240-300

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm3/ : 15.6...15.8

1000H.: (15.4...16.0)

Dispersion cm3/ : 0.6

1000H.: (0,8)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 800

Contr.-rod travelmm: 0.30...1.00

Governor-springreload

Notch setting x : 6.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Del.quantity cm3/ : 156.0...158.0

1000H.: (154.0...160.0)

Dispersion cm3/ : 6.9

1000H.: (8.0)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 62...70

Testing:

1st c-rod trav.mm : 12.10

Speed 1/min : 1140...1150

2nd c-rod trav.mm : 4.00

Speed 1/min : 1210...1240

4th speed 1/min : 1350

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever

position degrees: 26...34

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 4.00

Speed 1/min : 350

C-rod trav.mm : 4.40...4.60

C-rod trav.mm : 2.00

Speed 1/min : 440...500

E25

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 700

Del.quantity cm3/ : 156.5...161.5

1000H.: (154.0...164.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 240.0...290.0

1000H.: (-)

Remarks:

Delivery-valve spring pre-tension

3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on August 29, 1983

Start of delivery - engine: 20° before
TDC

Firing sequence of engine:

1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,0 Y1
Edition : 21.05.87
Superceeded : 7.85
Calibrating oil : ISO-4113

Combination no. : 0 401 876 728

Injection pump
Pump designation : PE6P110A72ORS3115
EP type number : 0 411 816 735
Governor
Governor design. : RSV350...1100P1/481
Governor no. : 0 421 833 121

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DN11 01

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.30...3.40
 : (3.25...3.45)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 12.40...12.50

Del.quantity cm3/ : 11.9...12.1

100H.: (11.7...12.3)

Dispersion cm3/ : 0.5

100H.: (0.7)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 5.1...5.3
Del.quantity cm3/ : 2.0...2.4
100H.: (-)
Dispersion cm3/ : 0.2
100H.: (0.4)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...1.00

Governor-spring reload
Notch setting x : 6.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 600
Del.quantity cm3/ : 119.0...121.0
1000H.: (117.0...123.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 62...70

Testing:

1st c-rod trav.mm : 11.40
Speed 1/min : 1140...1150
2nd c-rod trav.mm : 4.00
Speed 1/min : 1210...1240
4th speed 1/min : 1370
C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever

position degrees: 27...35
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 4.7
Speed 1/min : 350
C-rod trav.mm : 4.60...4.80
C-rod trav.mm : 2.00
Speed 1/min : 470...530

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1100
Del.quantity cm3/ : 119.5...124.5
1000H.: (117.0...127.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 5.10...5.30
Del.quantity cm3/ : 20.0...24.0
Dispersion cm3/ : 2.00
1000H.: (4.00)

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over
on Aug. 22, 1983
Start of delivery - engine: 21° before
TDC

E27

Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 E 2
Edition : 9.86
Superceeded : 3.85
Calibrating oil : ISO-4113

Combination no. : 0 401 876 733

Injection pump
Pump designation : PE6P120A32OLS3810-10
Governor
Governor design. : RSV350...1150POA810

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 421 A

1st version kW : 184.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00

E28

Cam sequence : 1-6-3-5-2-4

SD ang. spacing⁰CS: 0-75-120-195-240-315
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 1130

Contr.-rod trav.mm: 10.60...10.70

Del.quantity cm3/ : 16.3...16.5

100H.: (16.0...16.8)

Dispersion cm3/ : 0.50

100H.: (0.75)

2nd speed 1/min: 350
Contr.-rod trav. m: 4.70...4.90
Del.quantity cm3/ : 1.6...2.2
100H.: (-)
Dispersion cm3/ : 0.8
100H.: (1.2)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...1.00

Governor-spring reload
Notch setting x : 4.75

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1130
Del.quantity cm3/ : 163.0...165.0
1000H.: (160.0...168.0)
Dispersion cm3/ : 5.0
1000H.: (9.0)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 52...60

Testing:
1st c-rod trav.mm : 9.60
Speed 1/min : 1175...1185
2nd c-rod trav.mm : 4.00
Speed 1/min : 1250...1270
3rd c-rod trav.mm : 0.30...1.40
Speed 1/min : 1350

LOWEST RATED SPEED I

Control-lever

position degrees: 32...40

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 4.80

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 350

C-rod trav.mm : 4.70...4.90

C-rod trav.mm : 2.00

Speed 1/min : 380...440

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 140.0...160.0

1000H.: (136.0...164.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 D 1
Edition : 12.09.86
Superceeded : 12.85
Calibrating oil : ISO-4113

Combination no. : 0 401 876 739

Injection pump
Pump designation : PE6P110A320LS3805-10
EP type number : 0 411 816 740
Governor
Governor design. : RSV650...1150P1A820-
3
Governor no. : 0 421 833 177

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM421

1st version kW : 159.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...110

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values

START OF DELIVERY

Test pressure, bar: 25...27

F02

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing°CS: 0-45-120-165-240-285
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 1180

Contr.-rod trav.mm: 12.50...12.60

Del.quantity cm3/ : 13.7...13.9

100H.: (13.4...14.1)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 650.0
Contr.-rod trav. m: 6.0...6.2
Del.quantity cm3/ : 1.6...2.2
100H.: (1.3...2.4)
Dispersion cm3/ : 0.4
100H.: (0.7)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...0.70

Governor-spring reload
Notch setting x : ?

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1180
Del.quantity cm3/ : 137.0...139.0
1000H.: (134.5...141.5)
Dispersion cm3/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 53...61

Testing:
1st c-rod trav.mm : 11.50
Speed 1/min : 1210...1220

2nd c-rod trav.mm : 4.00
Speed 1/min : 1240...1260
4th speed 1/min : 1350
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 26...34
Setting point w/out aux. spring
Speed 1/min : 650
Contr.-rod trav.mm: 6.1

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 650
C-rod trav.mm : 6.00...6.20
C-rod trav.mm : 2.00
Speed 1/min : 650...715

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1180
C-rod trav.mm : 12.40...12.50
2nd speed 1/min : 970
C-rod trav.mm : 12.90...13.10
3rd speed 1/min : 1100
C-rod trav.mm : 12.50...12.70
4th speed 1/min : 700
C-rod trav.mm : 13.10...13.30

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 970
Del.quantity cm3/ : 137.0...141.0
1000H.: (134.0...144.0)
Dispersion cm3/ : 6.00
1000H.: (9.00)

Remarks:

2nd c-rod trav.mm : 4.00
Speed 1/min : 1235...1255
4th speed 1/min : 1350
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 32...40
Setting point w/out aux. spring
Speed 1/min : 750
Contr.-rod trav.mm: 3.4
Speed 1/min : 750
C-rod trav.mm : 3.30...3.50
C-rod trav.mm : 2.00
Speed 1/min : 755...815

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1180
C-rod trav.mm : 11.00...11.10
2nd speed 1/min : 975
C-rod trav.mm : 11.60...11.80
3rd speed 1/min : 600
C-rod trav.mm : 11.80...12.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 975
Del.quantity cm3/ : 174.0...180.0
1000H.: (171.0...183.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 T 1
Edition : 12.09.86
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 878 706
Injection pump
Pump designation : PE8P110A320LS3813-10
EP type number : 0 411 818 712
Governor
Governor design. : RSV350...750POA824-2
Governer no. : 0 421 833 228

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM422

1st version kW : 173.0
Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.90...14.00

Del.quantity cm3/ : 14.2...14.4

100H.: (13.9...14.6)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 7.7...7.9
Del.quantity cm3/ : 1.4...1.8
100H.: (1.1...2.0)
Dispersion cm3/ : 0.4
100H.: (0.7)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...1.40

Governor-spring reload
Notch setting x : ?

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Del.quantity cm3/ : 142.0...144.0
1000H.: (139.5...146.5)
Dispersion cm3/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 24...28

Testing:
1st c-rod trav.mm : 12.90

Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 780...793

LOWEST RATED SPEED I

Control-lever
position degrees: 12...20
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 7.1

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 350
C-rod trav.mm : 7.00...7.20

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...160.0
1000H.: (136.0...164.0)

Remarks:

Observe VDT-I-420/120

0

Testing:

1st c-rod trav.mm : 11.10
Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 780...793

LOWEST RATED SPEED I

Control-lever
position degrees: 12...20
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 4.9

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 350
C-rod trav.mm : 4.80...5.00

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 170.0...190.0
1000H.: (166.0...194.0)

Remarks:

Observe VDT-I-420/120

Q

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 18,3 I 1
Edition : 12.09.86
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 401 879 703

Injection pump
Pump designation : PE10P110A320LS3818-11
EP type number : 0 411 819 706
Governor
Governor design. : RSV650...1150POA823-2
Governor no. : 0 421 833 244

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 423

1st version kW : 238.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 130...150

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

F10

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 10- 9- 4- 1- 8- 7
 - 6- 3- 5- 2

SD ang. spacing°CS: 0-45-72-117-144-189-216-261-288-333
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 10

BASIC SETTING

1st speed 1/mi: 1180

Contr.-rod trav.mm: 10.90...11.00

Del.quantity cm3/ : 11.3...11.5

100H.: (11.0...11.7)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 650.0
Contr.-rod trav. m: 5.7...5.9
Del.quantity cm3/ : 1.2...2.0
100H.: (0.9...2.2)
Dispersion cm3/ : 0.4
100H.: (0.7)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...1.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1180
Del.quantity cm3/ : 113.0...115.0
1000H.: (110.5...117.5)
Dispersion cm3/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 36...44

Testing:
1st c-rod trav.mm : 10.00
Speed 1/min : 1210...1220

2nd c-rod trav.mm : 4.00
Speed 1/min : 1105...1135
4th speed 1/min : 1300
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 21...29
Setting point w/out aux. spring
Speed 1/min : 650
Contr.-rod trav.mm: 5.7

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 650
C-rod trav.mm : 5.60...5.80

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1180
C-rod trav.mm : 10.80...11.00
2nd speed 1/min : 1050
C-rod trav.mm : 11.70...11.90

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 950
Del.quantity cm3/ : 127.0...131.0
1000H.: (124.0...134.0)
Dispersion cm3/ : 6.00
1000H.: (9.00)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...150.0
1000H.: (126.0...154.0)

Remarks:

APPLICATION

Combine-harvester

When adjusting and checking, adjust
speed regulation to 1210...1220 l/min.
Afterwards, readjust speed regulation
to 1160...1170 l/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : STE 9,7 C
Edition : 10.86
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 886 700
Injection pump
Pump designation : PE6P110A721RS3102
Governor
Governor design. : RSV250...1200P1A516

Customer-spec. information
Customer : STEYR

Engine : WD 615.84

1st version kW : 191.0
Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : -

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5-3-6-2-4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1200

Contr.-rod trav.mm: 12.70...12.80

Del.quantity cm3/ : 15.4...15.7

100H.: (-)

Dispersion cm3/ : 0.4

100H.: (0.75)

2nd speed 1/min: 250

Contr.-rod trav. m: 7.00...7.20

Del.quantity cm3/ : 1.7...2.2

100H.: (-)

Dispersion cm3/ : 0.45

100H.: 0.75)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : ?

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1200

Charge press. hPa : 700

Del.quantity cm3/ : 154.0...157.0

1000H.: (151.5...159.5)

Dispersion cm3/ : 4.0

1000H.: (7.5)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 62...70

Testing:

1st c-rod trav.mm : 11.70

Speed 1/min : 1240...1250

2nd c-rod trav.mm : 4.00

Speed 1/min : 1310...1340

3rd c-rod trav.mm : 0.30...1.40

Speed 1/min : 1430

LOWEST RATED SPEED I

Control-lever
position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min : 250
Contr.-rod trav.mm: 6.60
Speed 1/min : 250
C-rod trav.mm : 7.00...7.20
C-rod trav.mm : 2.00
Speed 1/min : 490...550

compensator (LDA,ADA,ALDA)

1st version
Setting
Speed 1/min : 500
Pressure hPa : 700
Contr.-rod trav.mm: 12.70...12.80

Measurement
Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 10.20...10.30
2nd pressure hPa : 470
C-rod trav.mm : 12.10...12.20
3rd pressure hPa : 300
C-rod trav.mm : 10.60...10.80

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 700
Speed 1/min : 700
Del.quantity cm3/ : 150.0...154.0
1000H.: (147.0...157.0)
Dispersion cm3/ : -
1000H.: (-)
Charge press. hPa : -
Speed 1/min : 700
Del.quantity cm3/ : 102.0...105.0
1000H.: (99.5...107.5)
Dispersion cm3/ : -
1000H.: (-)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 190.0...220.0
1000H.: (-)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VAL 7,2 A
 Edition : 09.03.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 402 076 056
 Injection pump
 Pump designation : PES6P110A320RS505
 EP type number : 0 412 016 072
 Governor
 Governor design. : RSV325...1150POA522
 Governor no. : 0 421 833 242

Customer-spec. information
 Customer : VALMET

Engine : 612 DSJ

1st version kW : 165.0
 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.00...12.10

Del.quantity cm3/ : 13.8...14.1

100H.: (13.5...14.3)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 325.0

Contr.-rod trav. m: 7.1...7.3

Del.quantity cm3/ : 1.2...1.6

100H.: (0.9...1.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 4.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 700

Del.quantity cm3/ : 138.0...141.0

1000H.: (135.5...143.5)

Dispersion cm3/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 36...44

Testing:

1st c-rod trav.mm : 11.00

Speed 1/min : 1190...1200

2nd c-rod trav.mm : 4.00

Speed 1/min : 1290...1310

4th speed 1/min : 1460

C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 17...25
Setting point w/out aux. spring
Speed 1/min : 325
Contr.-rod trav.mm: 6.7

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.60
Speed 1/min : 325
C-rod trav.mm : 7.10...7.30
C-rod trav.mm : 2.00
Speed 1/min : 460...520

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 700
C-rod trav.mm : 12.00...12.10
2nd speed 1/min : 1150
C-rod trav.mm : 11.90...12.10

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 700
Contr.-rod trav.mm: 12.00...12.10

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 10.40...10.50
2nd pressure hPa : 400
C-rod trav.mm : 11.50...11.60

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 102.0...105.0
1000H.: (99.5...107.5)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 200.0...220.0
1000H.: (196.0...224.0)

LOW IDLE

Speed 1/min : 325
Contr.-rod trav.mm: 7.10...7.30

Del.quantity cm3/ : 12.0...16.0
1000H.: (9.5...18.5)
Dispersion cm3/ : 3.00
1000H.: (6.00)

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Tractor (tractor engines)

Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,0 V
Edition : 09.03.87
Superceeded : 9.84
Calibrating oil : ISO-4113
Combination no. : 0 402 646 803
Injection pump
Pump designation : PE6P120A72ORS7004
EP type number : 0 412 626 801
Governor
Governor design. : RQ75OPA528
Governor no. : 0 421 801 126

Customer-spec. information
Customer : SAAB-SCANIA

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025
Inlet press., bar : 1.50
Calibrating nozzle-holder
assembly : 1 688 901 019
Opening
pressure, bar : 207...210
Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015
Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27
Date of mfg. : 141

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00
Date of mfg. : < 052

Prestroke mm : 4.40...4.50
 : (4.35...4.55)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700
Contr.-rod trav.mm: 12.80...12.90
Del.quantity cm3/ : 20.9...21.1
 100H.: (20.6...21.4)
Dispersion cm3/ : 0.6
 100H.: (0.9)

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 600
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Del.quantity cm3/ : 209.0...211.0
 1000H.: (206.0...214.0)
Dispersion cm3/ : 6.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 21...29

Testing:

1st c-rod trav.mm : 11.80
Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 784...797
4th speed 1/min : 850
C-rod trav.mm : 0.30...1.00

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

HIGH IDLE
Contr.-rod trav.mm: 4.90...5.10
Dispersion cm3/ : 4.00
1000H.: (7.00)

Remarks:

: DS11 43, 44, 45
ADDITIONAL INFORMATION 11 42, 45

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

Check and set without ROBO diaphragm

Scania test specifications taken over
on Aug. 8, 1983
For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Start of delivery - engine:
DS 11 - 17° before TDC
DSI 11 - 16° before TDC
Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,0 V2
Edition : 09.03.87
Superceeded : 9.84
Calibrating oil : ISO-4113
Combination no. : 0 402 646 804
Injection pump
Pump designation : PE6P120A72ORS7004
EP type number : 0 412 626 801
Governor
Governor design. : RQ900PA528
Governor no. : 0 421 801 127

Customer-spec. information
Customer : SAAB-SCANIA

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025
Inlet press., bar : 1.50
Calibrating nozzle-holder
assembly : 1 688 901 019
Opening
pressure, bar : 207...210
Perforated-plate
diameter mm : 0,8
Test inj. tubing : 1 680 750 015
Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27
Date of mfg. : 141

Prestroke mm : 5.00...5.10
: (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00
Date of mfg. : < 052

Prestroke mm : 4.40...4.50
: (4.35...4.55)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 850
Contr.-rod trav.mm: 12.80...12.90
Del.quantity cm3/ : 20.7...20.9
100H.: (20.4...21.2)
Dispersion cm3/ : 0.6
100H.: (0.9)

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 600
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 850
Del.quantity cm3/ : 207.0...209.0
1000H.: (204.0...212.0)
Dispersion cm3/ : 6.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 22...30

Testing:

1st c-rod trav.mm : 11.80
Speed 1/min : 900...905
2nd c-rod trav.mm : 4.00
Speed 1/min : 941...955
4th speed 1/min : 1000
C-rod trav.mm : 0.00...1.00

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 240.0...290.0

1000H.: (-)

Contr.-rod trav.mm: 20.00...21.00

HIGH IDLE

Contr.-rod trav.mm: 4.90...5.10

Dispersion cm3/ : 4.00

1000H.: (7.00)

Remarks:

: DS11 43, 44, 45

Delivery-valve spring pre-tension

3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see

VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over
on Aug. 18, 1983

Engine model DS 11 - 17° before top
dead center.

Engine model DSI 11 - 16° before top
dead center.

Firing sequence of engine:

1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,0 V1
 Edition : 09.03.87
 Superseded : 9.84
 Calibrating oil : ISO-4113
 Combination no. : 0 402 646 805
 Injection pump
 Pump designation : PE6P120A72ORS7004
 EP type number : 0 412 626 801
 Governor
 Governor design. : RQ1050PAS28
 Governor no. : 0 421 801 128

Customer-spec. information
 Customer : SAAB-SCANIA

Engine : DS11 43,DS111 45

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
 Contr.-rod trav.mm: 9.00...12.00

F20

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

 Contr.-rod trav.mm: 12.80...12.90

 Del.quantity cm3/ : 21.4...21.6

 100H.: (21.1...21.9)

 Dispersion cm3/ : 0.6

 100H.: (0.9)

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1000
 Del.quantity cm3/ : 214.0...216.0
 1000H.: (211.0...219.0)
 Dispersion cm3/ : 6.00
 1000H.: (9.00)

HIGHEST RATED SPEED

Testing:
 1st c-rod trav.mm : 11.80
 Speed 1/min : 1050...1055
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1085...1095
 4th speed 1/min : 1150
 C-rod trav.mm : 0.00...1.00

STARTING FUEL DELIVERY

Speed 1/min : 100
 Del.quantity cm3/ : 240.0...290.0
 1000H.: (-)
 Contr.-rod trav.mm: 20.00...21.00

HIGH IDLE
 Contr.-rod trav.mm: 4.90...5.10
 Dispersion cm3/ : 4.00
 1000H.: (7.00)

Remarks:
 ADDITIONAL INFORMATION

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 3.0...3.1 mm.

Check and set without ROBO diaphragam

Scania test specifications taken over
on Aug. 18, 1983
For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Start of delivery - engine:
DS 11 - 17° before TDC
DSI 11 - 16° before TDC
Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,OU13
 Edition : 09.03.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 402 646 817
 Injection pump
 Pump designation : PE6P120A720RS7001
 EP type number : 0 412 626 800
 Governor
 Governor design. : RQV275...1000PA539-4
 Governor no. : 0 421 813 432

Customer-spec. information
 Customer : SCANIA

Engine : DS11 15

TEST BENCH REQUIREMENTS

Calibrating-gil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Calibrating nozzle-holder
 assembly : 1 688 901 019
 Opening
 pressure, bar : 207...210
 Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
 Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

 Contr.-rod trav.mm: 13.20...13.30

 Del.quantity cm3/ : 19.9...20.1

 100H.: (19.6...20.4)

 Dispersion cm3/ : 0.6

 100H.: (0.9)

2nd speed 1/min: 275.0
 Contr.-rod trav. m: 4.4...4.6

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 275
 Sleeve travel mm: 0.90...1.00
 2nd speed 1/min: 350
 Sleeve travel mm: 1.80...2.70
 3rd speed 1/min: 430
 Sleeve travel mm: 3.40...4.40
 4th speed 1/min: 500
 Sleeve travel mm: 4.80...5.00
 5th speed 1/min: 1040
 Sleeve travel mm: 8.00...8.10

SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed 1/min: 1090
 Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 700
 Charge press. hPa : 900
 Del.quantity cm3/ : 199.0...201.0
 1000H.: (196.0...204.0)
 Dispersion cm3/ : 6.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 58...66

Testing:

1st c-rod trav.mm : 12.20
Speed 1/min : 1040...1050
2nd c-rod trav.mm : 4.00
Speed 1/min : 1190...1220
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 4...12

Testing:

Speed 1/min : 100
C-rod trav.mm min : 5.90
Speed 1/min : 275
C-rod trav.mm : 4.40...4.60
C-rod trav.mm : 2.00
Speed 1/min : 320...380

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 13.20...13.30

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 11.60...11.70
2nd pressure hPa : 420
C-rod trav.mm : 12.80...12.90
3rd pressure hPa : 290
C-rod trav.mm : 11.90...12.10

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 1000
Del.quantity cm3/ : 193.0...201.0
1000H.: (191.0...203.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 160.0...164.0
1000H.: (158.0...166.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 275
Contr.-rod trav.mm: 4.40...4.60
Dispersion cm3/ : 3.00
1000H.: (6.00)

Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 3.0...3.1 mm.

Check and set without ROBO diaphragm

Scania test specifications taken over
on Aug. 18, 1983
For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Start of delivery - engine: 17° before
TDC
Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,0U11
Edition : 09.03.87
Superceeded : 10.85
Calibrating oil : ISO-4113

Combination no. : 0 402 646 819

Injection pump
Pump designation : PE6P120A72ORS7001
EP type number : 0 412 626 800
Governor
Governor design. : RQ200/1100PA713
Governor no. : 0 421 801 262

Customer-spec. information
Customer : SCANIA

Engine : DS11 25,26

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
: (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing²CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 11.70...11.80

Del.quantity cm3/ : 16.1...16.3

100H.: (15.8...16.6)

Dispersion cm3/ : 0.5

100H.: (0.8)

2nd speed 1/min: 225.0
Contr.-rod trav. m: 4.9...5.1
Del.quantity cm3/ : 1.3...1.7
100H.: (-)
Dispersion cm3/ : 0.3
100H.: (0.6)

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 600
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Charge press. hPa : 900
Del.quantity cm3/ : 161.0...163.0
1000H.: (158.0...166.0)
Dispersion cm3/ : 5.00
1000H.: (8.00)

HIGHEST RATED SPEED

Setting point:
Speed 1/min : 600
Contr.-rod trav.mm: 16.0

Testing:
1st c-rod trav.mm : 10.70
Speed 1/min : 1145...1160
2nd c-rod trav.mm : 4.00
Speed 1/min : 1290...1320
4th speed 1/min : 1400
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 225

Contr.-rod trav.mm: 4.5

Testing:

Speed 1/min : 100

C-rod trav.mm min : 5.90

Speed 1/min : 225

C-rod trav.mm : 4.40...4.60

C-rod trav.mm : 2.00

Speed 1/min : 300...340

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 11.70...11.80

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 10.40...10.50

2nd pressure hPa : 220

C-rod trav.mm : 11.40...11.50

3rd pressure hPa : 165

C-rod trav.mm : 10.50...10.70

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900

Speed 1/min : 1100

Del.quantity cm³/ : 163.0...171.0

1000H.: (161.0...173.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm³/ : 120.0...124.0

1000H.: (118.0...126.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm³/ : 240.0...290.0

1000H.: (-)

Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225

Contr.-rod trav.mm: 4.40...4.60

Remarks:

Because of flattening, set the spring

F25

preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Delivery-valve spring pre-tension

3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm

Because of flattening, set the spring

preload on new delivery-valve holders

to 3.0...3.1 mm.

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over
on May 17, 1984

Start of delivery - engine:

DS11 25 - 15° before TDC

DS11 26 - 11° before TDC

Firing sequence of engine:

1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,0U12
 Edition : 12.09.86
 Superseded : 8.85
 Calibrating oil : ISO-4113
 Combination no. : 0 402 646 819 W
 Injection pump
 Pump designation : PE6P120A72ORS7001W
 EP type number : 0 412 626 800
 Governor
 Governor design. : RQ200/1100PA713
 Governor no. : 0 421 801 262

Customer-spec. information
 Customer : SCANIA

Engine : DS11 28

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
 Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

 Contr.-rod trav.mm: 12.60...12.70

 Del.quantity cm3/ : 18.0...18.2

 100H.: (17.7...18.5)

 Dispersion cm3/ : 0.6

 100H.: (0.9)

2nd speed 1/min: 225.0
 Contr.-rod trav. m: 4.4...4.6
 Del.quantity cm3/ : 1.1...1.5
 100H.: (-)
 Dispersion cm3/ : 0.3
 100H.: (0.6)

SLEEVE POSITION

Control-lever position
 Degree: 45...47
 Speed 1/min: 600
 Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 700
 Charge press. hPa : 500
 Del.quantity cm3/ : 180.0...182.0
 1000H.: (177.0...185.0)
 Dispersion cm3/ : 6.00
 1000H.: (9.00)

HIGHEST RATED SPEED

Setting point:
 Speed 1/min : 600
 Contr.-rod trav.mm: 16.5

Testing:
 1st c-rod trav.mm : 11.60
 Speed 1/min : 1145...1160
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1270...1300
 4th speed 1/min : 1400
 C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 225
Contr.-rod trav.mm: 4.5

Testing:

Speed 1/min : 100
C-rod trav.mm min : 5.90
Speed 1/min : 225
C-rod trav.mm : 4.40...4.60
C-rod trav.mm : 2.00
Speed 1/min : 300...340

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 500
Contr.-rod trav.mm: 12.60...12.70

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 10.30...10.40
2nd pressure hPa : 220
C-rod trav.mm : 11.40...11.50
3rd pressure hPa : 165
C-rod trav.mm : 10.50...10.70

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 500
Speed 1/min : 1100
Del.quantity cm3/ : 178.0...186.0
1000H.: (176.0...188.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 120.0...124.0
1000H.: (118.0...126.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225
Contr.-rod trav.mm: 4.40...4.60
Del.quantity cm3/ : 11.0...15.0
1000H.: (-)

Dispersion cm3/ : 3.00
1000H.: (6.00)

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Delivery-valve spring pre-tension
3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring preload on new delivery-valve holders to 3.0...3.1 mm.

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over
on Aug. 30, 1984
Start of delivery - engine: 11° before
TDC
Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,1 A
 Edition : 09.03.87
 Superceeded : 2.86
 Calibrating oil : ISO-4113
 Combination no. : 0 402 646 828
 Injection pump
 Pump designation : PE6P120A72ORS7015
 EP type number : 0 412 626 810
 Governor
 Governor design. : RQV200...1000PA768
 Governor no. : 0 421 813 504

Customer-spec. information
 Customer : SCANIA

Engine : DSC11 03

TEST BENCH REQUIREMENTS

Calibrating-gil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 14.30...14.40

Del.quantity cm3/ : 21.8...22.0

100H.: (21.5...22.3)

Dispersion cm3/ : 0.6

100H.: (0.9)

2nd speed 1/min: 225.0

Contr.-rod trav. m: 4.8...5.0

Del.quantity cm3/ : 1.5...1.9

Dispersion cm3/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225

Sleeve travel mm: 1.30...1.50

2nd speed 1/min: 270

Sleeve travel mm: 1.90...2.10

3rd speed 1/min: 360

Sleeve travel mm: 2.60...3.00

4th speed 1/min: 1040

Sleeve travel mm: 8.40...8.60

5th speed 1/min: 1160

Sleeve travel mm: 10.10...10.30

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1040

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm3/ : 218.0...220.0

1000H.: (215.0...223.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 58...66

Testing:

1st c-rod trav.mm : 13.30

Speed 1/min : 1040...1050

2nd c-rod trav.mm : 4.00

Speed 1/min : 1150...1180

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 6...14

Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.30

Speed 1/min : 225

C-rod trav.mm : 4.80...5.00

C-rod trav.mm : 2.00

Speed 1/min : 330...390

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 14.30...14.40

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 12.50...12.60

2nd pressure hPa : 430

C-rod trav.mm : 13.70...13.80

3rd pressure hPa : 280

C-rod trav.mm : 12.70...12.90

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900

Speed 1/min : 1000

Del.quantity cm3/ : 208.0...216.0

1000H.: (206.0...218.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 175.0...179.0

1000H.: (173.0...181.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 240.0...290.0

1000H.: (-)

Contr.-rod trav.mm: 20.00...21.00

Remarks:

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Delivery-valve spring pre-tension
3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring preload on new delivery-valve holders to 3.0...3.1 mm.

Check and set without R0B0 diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over
on May 3, 1985
Start of delivery - engine: 17° before
TDC
Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,1 A1
Edition : 13.11.86
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 402 646 828 Z
Injection pump
Pump designation : PE6P120A72ORS7015Z
EP type number : 0 412 626 810
Governor
Governor design. : RQV200...1000PA768
Governor no. : 0 421 813 504

Customer-spec. information
Customer : SCANIA

Engine : DSC11 06

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27
Prestroke mm : 5.00...5.10
 : (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm3/ : 18.9...19.1

100H.: (18.6...19.4)

Dispersion cm3/ : 0.6

100H.: (0.9)

2nd speed 1/min: 225.0
Contr.-rod trav. m: 4.8...5.0
Del.quantity cm3/ : 1.5...1.9
100H.: (-)
Dispersion cm3/ : 0.3
100H.: (0.6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225
Sleeve travel mm: 1.30...1.50
2nd speed 1/min: 270
Sleeve travel mm: 1.90...2.10
3rd speed 1/min: 360
Sleeve travel mm: 2.60...3.00
4th speed 1/min: 1040
Sleeve travel mm: 8.40...8.60
5th speed 1/min: 1160
Sleeve travel mm: 10.10...10.30

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1040
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Charge press. hPa : 900
Del.quantity cm3/ : 189.0...191.0
1000H.: (186.0...194.0)
Dispersion cm3/ : 6.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 56...64

Testing:

1st c-rod trav.mm : 12.10

Speed 1/min : 1040...1050

2nd c-rod trav.mm : 4.00

Speed 1/min : 1150...1180

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 6...14

Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.30

Speed 1/min : 225

C-rod trav.mm : 4.80...5.00

C-rod trav.mm : 2.00

Speed 1/min : 330...390

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 13.10...13.20

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 12.50...12.60

2nd pressure hPa : 320

C-rod trav.mm : 12.90...13.00

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900

Speed 1/min : 1000

Del.quantity cm3/ : 184.0...192.0

1000H.: (182.0...194.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 175.0...179.0

1000H.: (173.0...181.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

G03

Del.quantity cm3/ : 240.0...290.0

1000H.: (-)

Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225

Contr.-rod trav.mm: 4.70...4.90

Remarks:

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Delivery-valve spring pre-tension

3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm

Because of flattening, set the spring preload on new delivery-valve holders to 3.0...3.1 mm.

Check and set without ROBO diaphragm

For comb. with letter index see VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over on May 3, 1985

Start of delivery - engine: 17° before TDC

Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 9,0 F
 Edition : 17.12.86
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 402 646 833
 Injection pump
 Pump designation : PE6P120A32ORS7102J
 EP type number : 0 412 626 812
 Governor
 Governor design. : RQV200...1100PA795
 Governor no. : 0 421 813 536

Customer-spec. information
 Customer : SCANIA

Engine : DS9 01

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)

Contr.-rod trav.mm: 9.00...12.00

G04

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 9.00...9.10

Del.quantity cm3/ : 10.6...10.8

100H.: (10.3...11.1)

Dispersion cm3/ : 0.5

100H.: (0.8)

2nd speed 1/min: 225.0

Contr.-rod trav. m: 5.1...5.3

Del.quantity cm3/ : 1.5...1.9

Dispersion cm3/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225

Sleeve travel mm: 0.90...1.10

2nd speed 1/min: 350

Sleeve travel mm: 1.80...2.20

3rd speed 1/min: 800

Sleeve travel mm: 5.20...5.50

4th speed 1/min: 1150

Sleeve travel mm: 7.90...8.10

5th speed 1/min: 1210

Sleeve travel mm: 8.50...8.80

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1200

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 106.0...108.0

1000H.: (103.0...111.0)

Dispersion cm3/ : 5.00

1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 40...48

Testing:
1st c-rod trav.mm : 8.00
Speed 1/min : 1140...1150
2nd c-rod trav.mm : 4.00
Speed 1/min : 1190...1220
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I
Control-lever
position degrees: 8...16

Testing:
Speed 1/min : 100
C-rod trav.mm min : 6.30
Speed 1/min : 225
C-rod trav.mm : 4.80...5.00
C-rod trav.mm : 2.00
Speed 1/min : 280...340

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 240.0...290.0
1000H.: {-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225
Contr.-rod trav.mm: 4.80...5.00

Remarks:
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 3.0...3.1 mm.

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over
on March 19, 1986
Start of delivery - engine: 15° before
TDC
Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 14,2 A3
Edition : 21.05.87
Superceeded : 8.85
Calibrating oil : ISO-4113

Combination no. : 0 402 648 801

Injection pump
Pump designation : PE8P120A920/4LS7002
EP type number : 0 412 628 800
Governor
Governor design. : RQV250...1000PA547
Governor no. : 0 421 813 270

Customer-spec. information
Customer : SCANIA

Engine : DS14 06

TEST BENCH REQUIREMENTS

Calibrating-pil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27
Date of mfg. : 141

Prestroke mm : 5.00...5.10
: (4.95...5.15)

Contr.-rod trav.mm: 9.00...12.00
Date of mfg. : < 052
Prestroke mm : 4.40...4.50
: (4.35...4.55)
Cam sequence : 1- 2- 7- 3- 4- 5-
6- 8

SD ang. spacing°CS: 0-45-90-135-180-225-
SD ang. spacing°CS: 270-315
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.20...13.30

Del.quantity cm3/ : 18.7...18.9
100H.: (18.4...19.2)

Dispersion cm3/ : 0.6
100H.: (0.9)

2nd speed 1/min: 225.0
Contr.-rod trav. m: 4.9...5.1
Del.quantity cm3/ : 1.0...1.4
100H.: (-)
Dispersion cm3/ : 0.3
100H.: (0.6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225
Sleeve travel mm: 1.30...1.40
2nd speed 1/min: 340
Sleeve travel mm: 2.50...2.80
3rd speed 1/min: 550
Sleeve travel mm: 4.00...4.30
4th speed 1/min: 1045
Sleeve travel mm: 8.40...8.60
5th speed 1/min: 1150
Sleeve travel mm: 9.80...10.20

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1040
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700
Charge press. hPa : 900
Del.quantity cm3/ : 187.0...189.0
1000H.: (184.0...192.0)
Dispersion cm3/ : 6.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 58...66

Testing:

1st c-rod trav.mm : 12.20
Speed 1/min : 1040...1050
2nd c-rod trav.mm : 4.00
Speed 1/min : 1140...1170
3rd c-rod trav.mm : 4.00
4th speed 1/min : 1250
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 5...13

Testing:

Speed 1/min : 100
C-rod trav.mm min : 5.90
Speed 1/min : 225
C-rod trav.mm : 4.40...4.60
C-rod trav.mm : 2.00
Speed 1/min : 310...370

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 13.20...13.30

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 11.30...11.40
2nd pressure hPa : 350
C-rod trav.mm : 12.80...12.90
3rd pressure hPa : 230
C-rod trav.mm : 11.90...12.10

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 1000
Del.quantity cm3/ : 184.0...192.0
1000H.: (182.0...194.0)
Charge press. hPa : -

G07

Speed 1/min : 500
Del.quantity cm3/ : 137.0...141.0
1000H.: (135.0...145.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225
Contr.-rod trav.mm: 4.40...4.60

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over
on Aug. 19, 1983
Engine start of delivery: 18° BTDC

Engine firing sequence: 1-5-4-2-6-3-7-8

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 14,2 A1
Edition : 06.10.86
Superceeded : 10.84
Calibrating oil : ISO-4113
Combination no. : 0 402 648 802
Injection pump
Pump designation : PE8P120A920LS7002S
EP type number : 0 412 628 800
Governor
Governor design. : RQV200...10SOPAS47
Governor no. : 0 421 813 293

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DS14 07

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 2- 7- 3- 4- 5-
 6- 8

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.00...13.10

Del.quantity cm3/ : 18.3...18.5

100H.: (18.0...18.8)

Dispersion cm3/ : 0.6

100H.: (0.9)

2nd speed 1/min: 225.0
Contr.-rod trav. m: 4.4...4.6
Del.quantity cm3/ : 1.0...1.4
100H.: (-)
Dispersion cm3/ : 0.3
100H.: (0.6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225
Sleeve travel mm: 1.20...1.40
2nd speed 1/min: 280
Sleeve travel mm: 1.80...2.10
3rd speed 1/min: 350
Sleeve travel mm: 2.40...2.80
4th speed 1/min: 1090
Sleeve travel mm: 8.40...8.60
5th speed 1/min: 1200
Sleeve travel mm: 9.80...10.10

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1100
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Charge press. hPa : 900
Del.quantity cm3/ : 183.0...185.0
1000H.: (180.0...188.0)

Dispersion cm3/ : 6.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 57...65

Testing:

1st c-rod trav.mm : 12.00
Speed 1/min : 1090...1100
2nd c-rod trav.mm : 4.00
Speed 1/min : 1180...1210
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 5...13

Testing:

Speed 1/min : 100
C-rod trav.mm min : 5.90
Speed 1/min : 225
C-rod trav.mm : 4.40...4.60
C-rod trav.mm : 2.00
Speed 1/min : 310...370

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 13.00...13.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 11.30...11.40
2nd pressure hPa : 350
C-rod trav.mm : 12.80...12.90
3rd pressure hPa : 230
C-rod trav.mm : 11.90...12.10

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 1000
Del.quantity cm3/ : 176.0...184.0
1000H.: (174.0...186.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 137.0...141.0
1000H.: (135.0...143.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...290.0
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225
Contr.-rod trav.mm: 4.40...4.60
Del.quantity cm3/ : 10.0...14.0
1000H.: (-)
Dispersion cm3/ : 3.00
1000H.: (6.00)

Remarks:

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Delivery-valve spring pre-tension
3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring preload on new delivery-valve holders to 3.0...3.1 mm.

Check and set without R0B0 diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over
on Aug. 19, 1983
Engine firing sequence: 1-5-4-2-6-3-7-8

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 14,2 D
Edition : 12.09.86
Superceeded : 8.84
Calibrating oil : ISO-4113
Combination no. : 0 402 648 807
Injection pump
Pump designation : PE8P120A920/4LS7008
EP type number : 0 412 628 803
Governor
Governor design. : RQV200...950PA547-1
Governor no. : 0 421 813 360

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DSC14 01

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.50...4.60
: (4.45...4.65)

Contr.-rod trav.mm: 6.00...8.00

Cam sequence : 1- 2- 7- 3- 4- 5-
6- 8

SD ang. spacing°CS: 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 7.00...13.90
& c-rod trav max. : 21.00
Difference ° CS : 1.45...2.15

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.90...14.00

Del.quantity cm3/ : 19.7...19.9

100H.: (19.4...20.2)

Dispersion cm3/ : 0.7

100H.: (1.0)

2nd speed 1/min: 225.0

Contr.-rod trav. m: 4.7...4.9

Del.quantity cm3/ : 1.4...1.8

100H.: (-)

Dispersion cm3/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225

Sleeve travel mm: 1.30...1.50

2nd speed 1/min: 270

Sleeve travel mm: 1.90...2.10

3rd speed 1/min: 360

Sleeve travel mm: 2.60...3.00

4th speed 1/min: 990

Sleeve travel mm: 7.80...8.00

5th speed 1/min: 1120

Sleeve travel mm: 9.40...9.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1040

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Charge press. hPa : 900
Del.quantity cm3/ : 197.0...199.0
1000H.: (194.0...202.0)
Dispersion cm3/ : 7.00
1000H.: (10.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 56...64

Testing:

1st c-rod trav.mm : 12.90
Speed 1/min : 990...1000
2nd c-rod trav.mm : 4.00
Speed 1/min : 1110...1140
4th speed 1/min : 1250
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 6...14

Testing:

Speed 1/min : 100
C-rod trav.mm min : 6.20
Speed 1/min : 225
C-rod trav.mm : 4.70...4.90
C-rod trav.mm : 2.00
Speed 1/min : 330...390

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 13.90...14.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 11.00...11.10
2nd pressure hPa : 335
C-rod trav.mm : 13.10...13.20
3rd pressure hPa : 215
C-rod trav.mm : 11.60...11.80

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 950
Del.quantity cm3/ : 190.0...198.0
1000H.: (188.0...200.0)

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 146.0...150.0
1000H.: (144.0...152.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225
Contr.-rod trav.mm: 4.70...4.90
Del.quantity cm3/ : 14.0...18.0
1000H.: (-)
Dispersion cm3/ : 3.00
1000H.: (6.00)

Remarks:

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring preload on new delivery-valve holders to 3.0...3.1 mm.

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-i-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over
on Aug. 19, 1983
Engine firing sequence: 1-5-4-2-6-3-7-8

Start of delivery - engine: 22° before
TDC at control-rod travel = 6.0...
8.0 mm

1st version
Speed 1/min: 700
Charge press. hPa : 900
Del.quantity cm3/ : 197.0...199.0
1000H.: (194.0...202.0)
Dispersion cm3/ : 7.00
1000H.: (10.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 55...63

Testing:

1st c-rod trav.mm : 12.90
Speed 1/min : 990...1000
2nd c-rod trav.mm : 4.00
Speed 1/min : 1170...1200
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 5...13

Testing:

Speed 1/min : 100
C-rod trav.mm min : 6.20
Speed 1/min : 275
C-rod trav.mm : 4.70...4.90
C-rod trav.mm : 2.00
Speed 1/min : 330...390

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 13.90...14.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 11.00...11.10
2nd pressure hPa : 335
C-rod trav.mm : 13.10...13.20
3rd pressure hPa : 215
C-rod trav.mm : 11.60...11.80

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 900
Speed 1/min : 950
Del.quantity cm3/ : 190.0...198.0
1000H.: (188.0...200.0)

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 146.0...150.0
1000H.: (144.0...152.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 275
Contr.-rod trav.mm: 4.70...4.90
Dispersion cm3/ : 3.00
1000H.: (6.00)

Remarks:

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Delivery-valve spring pre-tension
3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring preload on new delivery-valve holders to 3.0...3.1 mm.

Check and set without R0B0 diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over
on Nov. 2, 1983
Start of delivery - engine: 22° before
TDC at control-rod travel = 6.0...
8.0 mm
Engine firing sequence: 1-5-4-2-6-3-7-8

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 14,2 D2
Edition : 12.09.86
Superceeded : 4.86
Calibrating oil : ISO-4113
Combination no. : 0 402 648 815
Injection pump
Pump designation : PE8P120A920/4LS7008X
EP type number : 0 412 628 812
Governor
Governor design. : RQV200...950PA547-6
Governor no. : 0 421 813 499

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DSC14 02

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.50...4.60
 : (4.45...4.65)

Contr.-rod trav.mm: 6.00...8.00

Cam sequence : 1- 2- 7- 3- 4- 5-
 6- 8

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 7.00...12.80

& c-rod tray max. : 21.00

Difference ° CS : 1.05...1.75

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.80...12.90

Del.quantity cm3/ : 18.3...18.5

100H.: (18.0...18.8)

Dispersion cm3/ : 0.7

100H.: (1.0)

2nd speed 1/min: 225.0

Contr.-rod trav. m: 4.7...4.9

Del.quantity cm3/ : 1.4...1.8

100H.: (-)

Dispersion cm3/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225

Sleeve travel mm: 1.30...1.40

2nd speed 1/min: 260

Sleeve travel mm: 1.70...1.90

3rd speed 1/min: 360

Sleeve travel mm: 2.60...3.00

4th speed 1/min: 1000

Sleeve travel mm: 7.90...9.00

5th speed 1/min: 1110

Sleeve travel mm: 9.30...9.50

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1040

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Charge press. hPa : 900
Del.quantity cm3/ : 183.0...185.0
1000H.: (180.0...188.0)
Dispersion cm3/ : 7.00
1000H.: (10.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 55...63

Testing:

1st c-rod trav.mm : 11.80
Speed 1/min : 990...1000
2nd c-rod trav.mm : 4.00
Speed 1/min : 1090...1120
4th speed 1/min : 1250
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 6...14

Testing:

Speed 1/min : 100
C-rod trav.mm min : 6.20
Speed 1/min : 225
C-rod trav.mm : 4.70...4.90
C-rod trav.mm : 2.00
Speed 1/min : 330...390

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 12.80...12.90

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 11.00...11.10
3rd pressure hPa : ?
C-rod trav.mm : 11.60...11.80

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 950
Del.quantity cm3/ : 177.0...185.0
1000H.: (175.0...187.0)
Charge press. hPa : -
Speed 1/min : 500

Del.quantity cm3/ : 146.0...150.0
1000H.: (144.0...152.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225
Contr.-rod trav.mm: 4.70...4.90
Del.quantity cm3/ : 14.0...18.0
1000H.: (-)
Dispersion cm3/ : 3.00
1000H.: (6.00)

Remarks:

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Delivery-valve spring pre-tension
3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring preload on new delivery-valve holders to 3.0...3.1 mm.

Check and set without R0B0 diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over
on May 3, 1985

Start of delivery - engine: 22° before
TDC at control-rod travel = 6.0...
8.0 mm

Engine firing sequence: 1-5-4-2-6-3-7-8

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,0 U4
Edition : 05.06.87
Superceeded : 11.84
Calibrating oil : ISO-4113
Combination no. : 0 402 676 800
Injection pump
Pump designation : PE6P120A72ORS7001
EP type number : 0 412 626 800
Governor
Governor design. : RSV350...1100P1/481
Governor no. : 0 421 833 121

Customer-spec. information
Customer : SAAB-SCANIA

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025
Inlet press., bar : 1.50
Calibrating nozzle-holder
assembly : 1 688 901 019
Opening
pressure, bar : 207...210
Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27
Date of mfg. : 141

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00
Date of mfg. : < 052

Prestroke mm : 4.40...4.50
 : (4.35...4.55)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700
Contr.-rod trav.mm: 13.20...13.30
Del.quantity cm3/ : 19.9...20.1
100H.: (19.6...20.4)
Dispersion cm3/ : 0.6
100H.: (0.9)
2nd speed 1/min: 350.0
Contr.-rod trav. m: 4.4...4.6
Del.quantity cm3/ : 1.3...1.7
100H.: (-)
Dispersion cm3/ : 0.3
100H.: (0.6)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...1.00

Governor-spring reload
Notch setting x : 6.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Del.quantity cm3/ : 199.0...201.0
1000H.: (196.0...204.0)
Dispersion cm3/ : 6.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 62...70

Testing:
1st c-rod trav.mm : 12.20
Speed 1/min : 1090...1100
2nd c-rod trav.mm : 4.00

Speed 1/min : 1170...1200
4th speed 1/min : 1300
C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 27...35
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 4.0
Speed 1/min : 350
C-rod trav.mm : 3.90...4.10
C-rod trav.mm : 2.00
Speed 1/min : 440...500

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1000
Del.quantity cm3/ : 193.0...201.0
1000H.: (190.0...204.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 4.40...4.60
Del.quantity cm3/ : 13.0...17.0
1000H.: (-)
Dispersion cm3/ : 3.00
1000H.: (6.00)

Remarks:

: DS11 40, 41, 42
: DSI11 40, 44

Delivery-valve spring pre-tension
3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm

ADDITIONAL INFORMATION

Check and set without ROBO diaphragam

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over
on Aug. 18, 1983
Start of delivery on engine.

Engine model DS 11 - 17° before top
dead center.

Engine model DSI 11 - 16° before top
dead center.

Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 9,0 A
Edition : 15.05.87
Superceeded : 3.86
Calibrating oil : ISO-4113
Combination no. : 0 402 746 800
Injection pump
Pump designation : PE6P12QA32ORS7102
EP type number : 0 412 626 804
Governor
Governor design. : RQV200...1100PA712-1
Governor no. : 0 421 813 448

Customer-spec. information
Customer : SCANIA

Engine : DS9 01

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700
Contr.-rod trav.mm: 12.00...12.10
Del.quantity cm3/ : 16.3...16.5
100H.: (16.0...16.8)
Dispersion cm3/ : 0.6
100H.: (0.9)

2nd speed 1/min: 225.0
Contr.-rod trav. m: 4.6...5.2
Del.quantity cm3/ : 1.5...1.9
100H.: (1.3...2.1)
Dispersion cm3/ : 0.3
100H.: (0.6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225
Sleeve travel mm: 1.10...1.50
2nd speed 1/min: 350
Sleeve travel mm: 2.60...3.20
3rd speed 1/min: 700
Sleeve travel mm: 4.50...5.10
4th speed 1/min: 1145
Sleeve travel mm: 7.50...7.70
5th speed 1/min: 1290
Sleeve travel mm: 8.80...9.20

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1160
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Charge press. hPa : 900
Del.quantity cm3/ : 163.0...165.0
1000H.: (160.0...168.0)
Dispersion cm3/ : 6.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 54...62

Testing:

1st c-rod trav.mm : 11.00

Speed 1/min : 1140...1150

2nd c-rod trav.mm : 4.00

Speed 1/min : 1275...1305

4th speed 1/min : 1400

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 6...14

Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.30

Speed 1/min : 225

C-rod trav.mm : 4.60...5.20

C-rod trav.mm : 2.00

Speed 1/min : 300...360

CONSTANT REGULATION

Speed 1/min : 225...365

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 12.00...12.10

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 11.15...11.55

2nd pressure hPa : 420

C-rod trav.mm : 11.70...11.80

3rd pressure hPa : 380

C-rod trav.mm : 11.50...11.70

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900

Speed 1/min : 1100

Del.quantity cm3/ : 160.0...168.0

1000H.: (158.0...170.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 141.0...145.0

1000H.: (139.0...147.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 240.0...290.0

1000H.: (236.0...294.0)

Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225

Contr.-rod trav.mm: 4.60...5.20

Del.quantity cm3/ : 15.0...19.0

1000H.: (13.0...21.0)

Dispersion cm3/ : 3.00

1000H.: (6.00)

Remarks:

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Delivery-valve spring pre-tension
3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm

Because of flattening, set the spring preload on new delivery-valve holders to 3.0...3.1 mm.

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over
on Oct. 4, 1984
Start of delivery - engine: 15° before

TDC

Firing sequence of engine:

1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 9,0 C
Edition : 15.05.87
Superceeded : 12.85
Calibrating oil : ISO-4113

Combination no. : 0 402 746 801

Injection pump
Pump designation : PE6P120A32ORS7103
EP type number : 0 412 626 805
Governor
Governor design. : RQV200...1100PA712
Governor no. : 0 421 813 442

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DSC 9 01

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.50...4.60
 : (4.45...4.65)
Contr.-rod trav.mm: 6.00...8.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 7.00...12.50
& c-rod tray max. : 21.00
Difference⁰ CS : 1.00...1.70

BASIC SETTING

| | | |
|---------------------|--------|---------------|
| 1st speed | 1/mi: | 700 |
| ----- | | |
| Contr.-rod trav.mm: | | 12.50...12.60 |
| ----- | | |
| Del.quantity cm3/ | | 17.8...18.0 |
| ----- | | |
| | 100H.: | (17.5...18.3) |
| ----- | | |
| Dispersion | cm3/ | 0.7 |
| ----- | | |
| | 100H.: | (1.0) |
| ----- | | |
| 2nd speed | 1/min: | 225.0 |
| Contr.-rod trav. m: | | 4.4...5.0 |
| Del.quantity cm3/ | | 1.5...1.9 |
| ----- | | |
| | 100H.: | (1.3...2.1) |
| ----- | | |
| Dispersion | cm3/ | 0.3 |
| ----- | | |
| | 100H.: | (0.6) |

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

| | | |
|-------------------------------|--------|------|
| 1st speed | 1/min: | 225 |
| Sleeve travel mm: 1.10...1.50 | | |
| 2nd speed | 1/min: | 350 |
| Sleeve travel mm: 2.60...3.20 | | |
| 3rd speed | 1/min: | 700 |
| Sleeve travel mm: 4.50...5.10 | | |
| 4th speed | 1/min: | 1145 |
| Sleeve travel mm: 7.50...7.70 | | |
| 5th speed | 1/min: | 1300 |
| Sleeve travel mm: 8.90...9.30 | | |

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1150
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700
Charge press. hPa : 900
Del.quantity cm3/ : 178.0...180.0
1000H.: (175.0...183.0)
Dispersion cm3/ : 7.00
1000H.: (10.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 55...63

Testing:

1st c-rod trav.mm : 11.50
Speed 1/min : 1140...1150
2nd c-rod trav.mm : 4.00
Speed 1/min : 1285...1315
4th speed 1/min : 1400
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 6...14

Testing:

Speed 1/min : 125
C-rod trav.mm min : 6.10
Speed 1/min : 225
C-rod trav.mm : 4.40...5.00

CONSTANT REGULATION

Speed 1/min : 225...365

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 12.50...12.60

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 10.10...10.50
2nd pressure hPa : 435
C-rod trav.mm : 11.90...12.00
3rd pressure hPa : 335
C-rod trav.mm : 10.60...10.80

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 1100
Del.quantity cm3/ : 177.0...185.0
1000H.: (175.0...187.0)
Charge press. hPa : -

G25

Speed 1/min : 500
Del.quantity cm3/ : 138.0...142.0
1000H.: (136.0...144.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225
Contr.-rod trav.mm: 4.40...5.00
Del.quantity cm3/ : 15.0...19.0
1000H.: (13.0...21.0)
Dispersion cm3/ : 3.00
1000H.: (6.00)

Remarks:

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring preload on new delivery-valve holders to 3.0...3.1 mm.

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

Scania test specifications taken over
on Oct. 4, 1984
Start of delivery - engine: 18° before
TDC at control-rod travel =

6.00...8.00 mm

Firing sequence of engine:

1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 A 14
 Edition : 10.04.87
 Superseded : 11.85
 Calibrating oil : ISO-4113
 Combination no. : 0 403 444 110
 Injection pump
 Pump designation : PES4MW100/720RS1127
 EP type number : 0 413 404 103
 Governor
 Governor design. : RQV300...1300MW48-1
 Governor no. : 0 420 083 084

Customer-spec. information
 Customer : DB

Engine : OM 364 A

1st version kW : 85.0
 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-pil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness : 6.00x2.00x600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270
 Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

 Contr.-rod trav.mm: 11.10...11.20

 Del.quantity cm3/ : 8.5...8.7

 100H.: (8.3...8.9)

 Dispersion cm3/ : 0.35

 100H.: (0.6)

 2nd speed 1/min: 300.0
 Contr.-rod trav. m: 7.8...7.9
 Del.quantity cm3/ : 1.0...1.4
 100H.: (0.8...1.6)
 Dispersion cm3/ : 0.35
 100H.: (0.5)

SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed 1/min: 1330
 Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1300
 Del.quantity cm3/ : 85.0...87.0
 1000H.: (83.0...89.0)
 Dispersion cm3/ : 3.50
 1000H.: (6.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 50...58

Testing:

1st c-rod trav.mm : 10.10
 Speed 1/min : 1340...1350
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1430...1460
 4th speed 1/min : 1550
 C-rod trav.mm : 9.00...11.00

LOWEST RATED SPEED I

Control-lever
 position degrees: 17...25
 Setting point w/out aux. spring

Speed 1/min : 300
Contr.-rod trav.mm: 7.85

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.50
Speed 1/min : 300
C-rod trav.mm : 7.80...7.90

CONSTANT REGULATION

Speed 1/min : 330...600

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300
C-rod trav.mm : 11.10...11.20
2nd speed 1/min : 750
C-rod trav.mm : 11.90...12.10
3rd speed 1/min : 585
C-rod trav.mm : 12.10...12.30
4th speed 1/min : 1000
C-rod trav.mm : 11.10...11.30

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 750
Del.quantity cm3/ : 84.5...86.5
1000H.: (82.5...88.5)
Dispersion cm3/ : 5.00
1000H.: (7.00)
Speed 1/min : 585
Del.quantity cm3/ : 80.5...83.5
1000H.: (78.5...86.5)
Dispersion cm3/ : 5.00
1000H.: 7.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 7.80...7.90
Del.quantity cm3/ : 10.0...14.0
1000H.: (8.0...16.0)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 A 19
 Edition : 10.04.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 403 444 112
 Injection pump
 Pump designation : PES4MW100/72ORS1127
 EP type number : 0 413 404 103
 Governor
 Governor design. : RQV300...1300MW48-2
 Governer no. : 0 420 083 110

Customer-spec. information
 Customer : DB

Engine : OM 364 A

1st version kW : 85.0
 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270
 Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 11.10...11.20

Del.quantity cm3/ : 8.5...8.7

100H.: (8.3...8.9)

Dispersion cm3/ : 0.35

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.8...7.9

Del.quantity cm3/ : 1.0...1.4

100H.: (0.8...1.6)

Dispersion cm3/ : 0.35

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1330

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Del.quantity cm3/ : 85.0...87.0

1000H.: (83.0...89.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 50...58

Testing:

1st c-rod trav.mm : 10.10

Speed 1/min : 1340...1350

2nd c-rod trav.mm : 4.00

Speed 1/min : 1430...1460

4th speed 1/min: 1550

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 17...25

Setting point w/out aux. spring

Speed 1/min : 300
Contr.-rod trav.mm: 7.85

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.50
Speed 1/min : 300
C-rod trav.mm : 7.80...7.90

CONSTANT REGULATION

Speed 1/min : 330...600

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300
C-rod trav.mm : 11.10...11.20
2nd speed 1/min : 750
C-rod trav.mm : 11.80...12.10
3rd speed 1/min : 585
C-rod trav.mm : 12.10...12.30
4th speed 1/min : 1000
C-rod trav.mm : 11.10...11.30

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 750
Del.quantity cm3/ : 84.5...86.5
1000H.: (82.5...88.5)
Dispersion cm3/ : 5.00
1000H.: (7.00)
Speed 1/min : 585
Del.quantity cm3/ : 80.5...83.5
1000H.: (78.5...86.5)
Dispersion cm3/ : 5.00
1000H.: 7.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 7.80...7.90
Del.quantity cm3/ : 10.0...14.0
1000H.: (8.0...16.0)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 A 20
Edition : 02.06.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 444 113
Injection pump
Pump designation : PES4MW100/72ORS1151
EP type number : 0 413 404 104
Governor
Governor design. : RQV300...1300MW50-3
Governer no. : 0 420 083 129

Customer-spec. information
Customer : DB

Engine : OM 364 LA

1st version kW : 100.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300
Contr.-rod trav.mm: 12.60...12.70
Del.quantity cm3/ : 9.8...10.0
100H.: (9.6...10.2)
Dispersion cm3/ : 0.3
100H.: (0.6)
2nd speed 1/min: 300.0
Contr.-rod trav. m: 6.8...6.9
Del.quantity cm3/ : 1.0...1.4
100H.: (0.7...1.6)
Dispersion cm3/ : 0.3
100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1340
Sleeve travel mm: 8.50...8.70
2nd speed 1/min: 1450
Sleeve travel mm: 9.50...9.90
3rd speed 1/min: 500
Sleeve travel mm: 2.70...3.30
4th speed 1/min: 300
Sleeve travel mm: 1.30...1.70

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1340
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1300
Charge press. hPa : 700
Del.quantity cm3/ : 98.0...100.0
1000H.: (96.0...102.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 49...57

Testing:

1st c-rod trav.mm : 11.60
Speed 1/min : 1340...1350
2nd c-rod trav.mm : 4.00
Speed 1/min : 1445...1475
4th speed 1/min : 1550
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 16...24
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 6.8

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.40
Speed 1/min : 300
C-rod trav.mm : 6.80...6.90

CONSTANT REGULATION

Speed 1/min : 320...550

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 200
Contr.-rod trav.mm: 11.30...11.40

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 10.50...10.60
2nd pressure hPa : 335
C-rod trav.mm : 12.10...12.40
3rd pressure hPa : 700
C-rod trav.mm : 12.60...12.70

SWITCH-OVER POINT

Speed 1/min : 220 (250)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700
Speed 1/min : 600
Del.quantity cm3/ : 82.5...85.5
1000H.: (80.0...88.5)
Dispersion cm3/ : 5.00
1000H.: (7.00)
Charge press. hPa : -
Speed 1/min : 500

Del.quantity cm3/ : 49.0...51.0
1000H.: (47.0...53.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 85.0...95.0
1000H.: (82.0...98.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 6.80...6.90
Del.quantity cm3/ : 10.0...14.0
1000H.: (7.5...16.5)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 A 12
Edition : 02.06.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 446 124
Injection pump
Pump designation : PES6MW100/72ORS1101
EP type number : 0 413 406 102
Governor
Governor design. : RQV300/1300MW34
Governor no. : 0 420 083 032

Customer-spec. information
Customer : DB

Engine : OM362LA

1st version kW : 141.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 30...32

Prestroke mm : 3.20...3.30
: (3.15...3.35)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 11.90...12.00

Del.quantity cm3/ : 9.4...9.6

100H.: (9.2...9.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.0...6.1

Del.quantity cm3/ : 1.0...1.4

100H.: (0.8...1.7)

Dispersion cm3/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1300

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Charge press. hPa : 700

Del.quantity cm3/ : 94.5...96.5

1000H.: (92.5...98.5)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 57...65

Testing:

1st c-rod trav.mm : 10.90

Speed 1/min : 1340...1350

2nd c-rod trav.mm : 4.00

Speed 1/min : 1460...1490

4th speed 1/min : 1600

C-rod trav.mm : 0.10...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 16...24

H06

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.60

Speed 1/min : 300

C-rod trav.mm : 6.00...6.10

C-rod trav.mm : 2.00

Speed 1/min : 460...520

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : -

Contr.-rod trav.mm: 10.20...10.30

Measurement

Speed 1/min : 500

1st pressure hPa : 100

C-rod trav.mm : 0.40...0.50

2nd pressure hPa : 125

C-rod trav.mm : 0.90...1.10

3rd pressure hPa : 700

C-rod trav.mm : 11.90...12.00

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 800

Del.quantity cm3/ : 92.0...96.0

1000H.: (90.0...98.0)

Dispersion cm3/ : 5.00

1000H.: (7.00)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 54.5...56.5

1000H.: (52.5...58.5)

Dispersion cm3/ : 3.50

1000H.: 6.00

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 80.0...90.0

1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 6.00...6.10
Del.quantity cm3/ : 10.5...14.5
1000H.: (8.0...17.0)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 A 11
Edition : 02.06.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 403 446 134

Injection pump
Pump designation : PES6MW100/72ORS1101
EP type number : 0 413 406 102
Governor
Governor design. : RQV300/1300MW44
Governor no. : 0 420 083 053

Customer-spec. information
Customer : DB

Engine : OM362LA

1st version kW : 141.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.20...3.30
: (3.15...3.35)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 11.90...12.00

Del.quantity cm3/ : 9.4...9.6

100H.: (9.2...9.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.0...6.1

Del.quantity cm3/ : 1.0...1.4

100H.: (0.8...1.7)

Dispersion cm3/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1330

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Charge press. hPa : 700

Del.quantity cm3/ : 94.5...96.5

1000H.: (92.5...98.5)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 60...68

Testing:

1st c-rod trav.mm : 10.90

Speed 1/min : 1340...1350

2nd c-rod trav.mm : 4.00

Speed 1/min : 1435...1465

4th speed 1/min : 1600

C-rod trav.mm : 0.10...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 7...15

H09

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.60

Speed 1/min : 300

C-rod trav.mm : 6.00...6.10

C-rod trav.mm : 2.00

Speed 1/min : 520...580

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : -

Contr.-rod trav.mm: 10.00...10.10

Measurement

Speed 1/min : 500

1st pressure hPa : 100

C-rod trav.mm : 0.40...0.50

2nd pressure hPa : 125

C-rod trav.mm : 0.90...1.10

3rd pressure hPa : 700

C-rod trav.mm : 11.90...12.00

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 800

Del.quantity cm3/ : 92.0...96.0

1000H.: (90.0...98.0)

Dispersion cm3/ : 5.00

1000H.: (7.00)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 51.5...53.5

1000H.: (49.5...55.5)

Dispersion cm3/ : 3.50

1000H.: 6.00

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 80.0...90.0

1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 6.00...6.10
Del.quantity cm3/ : 10.5...14.5
1000H.: (8.0...17.0)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 8,7 0
Edition : 02.06.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 403 446 143

Injection pump
Pump designation : PES6MW100/72ORS1101
EP type number : 0 413 406 102
Governor
Governor design. : RQV300/1300MW44-1
Governor no. : 0 420 083 064

Customer-spec. information
Customer : DB

Engine : OM362LA

1st version kW : 141.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.20...3.30
: (3.15...3.35)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 11.90...12.00

Del.quantity cm3/ : 9.4...9.6

100H.: (9.2...9.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.0...6.1

Del.quantity cm3/ : 1.0...1.4

100H.: (0.8...1.7)

Dispersion cm3/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1330

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Charge press. hPa : 700

Del.quantity cm3/ : 94.5...96.5

1000H.: (92.5...98.5)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 60...68

Testing:

1st c-rod trav.mm : 10.90

Speed 1/min : 1340...1350

2nd c-rod trav.mm : 4.00

Speed 1/min : 1435...1465

4th speed 1/min : 1600

C-rod trav.mm : 0.10...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 7...15

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.60

Speed 1/min : 300

C-rod trav.mm : 6.00...6.10

C-rod trav.mm : 2.00

Speed 1/min : 520...580

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : -

Contr.-rod trav.mm: 10.20...10.30

Measurement

Speed 1/min : 500

1st pressure hPa : 100

C-rod trav.mm : 0.40...0.50

2nd pressure hPa : 125

C-rod trav.mm : 0.90...1.10

3rd pressure hPa : 700

C-rod trav.mm : 11.90...12.00

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 800

Del.quantity cm3/ : 92.0...96.0

1000H.: (90.0...98.0)

Dispersion cm3/ : 5.00

1000H.: (7.00)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 54.5...56.5

1000H.: (52.5...58.5)

Dispersion cm3/ : 3.50

1000H.: 6.00

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 80.0...90.0

1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 6.00...6.10
Del.quantity cm3/ : 10.5...14.5
1000H.: (8.0...17.0)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

Set intermediate-speed stop (ZDA) to
contact at 1300 1/min, then turn back
1/2 turn.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 9
Edition : 03.04.87
Superceeded : 4.86
Calibrating oil : ISO-4113
Combination no. : 0 403 446 158
Injection pump
Pump designation : PES6MW100/72ORS1131
EP type number : 0 413 406 123
Governor
Governor design. : RQV300...1300MW50-1
Governor no. : 0 420 083 089

Customer-spec. information
Customer : DB

Engine : OM 366 LA

1st version kW : 150.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 12.10...12.20

Del.quantity cm3/ : 9.65...10.25

100H.: (9.85...10.45)

Dispersion cm3/ : 0.35

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.1...6.2

Del.quantity cm3/ : 0.9...1.3

100H.: (0.65...1.55)

Dispersion cm3/ : 0.35

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1340

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Charge press. hPa : 700

Del.quantity cm3/ : 96.5...102.5

1000H.: (98.5...104.5)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 48...56

Testing:

1st c-rod trav.mm : 11.10

Speed 1/min : 1340...1350

2nd c-rod trav.mm : 4.00

Speed 1/min : 1440...1470

4th speed 1/min : 1550

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 11...19

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 6.1

Testing:

Speed 1/min : 100
C-rod trav.mm min : 7.60
Speed 1/min : 300
C-rod trav.mm : 6.10...6.20

CONSTANT REGULATION

Speed 1/min : 350...550

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 170
Contr.-rod trav.mm: 10.80...10.90

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 10.50...10.60
2nd pressure hPa : 225
C-rod trav.mm : 11.70...12.00
3rd pressure hPa : 700
C-rod trav.mm : 12.10...12.20

SWITCH-OVER POINT

Speed 1/min : 220 (250)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700
Speed 1/min : 600
Del.quantity cm3/ : 85.0...89.0
1000H.: (83.0...91.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 54.0...56.0
1000H.: (52.0...58.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 71.0...81.0
1000H.: (68.0...84.0)

LOW IDLE

Speed 1/min : 300

H15

Contr.-rod trav.mm: 6.10...6.20
Del.quantity cm3/ : 9.00...13.0
1000H.: (6.5...15.5)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet :
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 403 446 166

Injection pump
Pump designation : PES6MW100/72ORS1133
EP type number : 0 413 406 126
Governor
Governor design. : RQ325...1325MW65
Governor no. : 0 420 082 018

Customer-spec. information
Customer : KHD

Engine : BF 6L 913 BW

1st version kW : 124.0
Speed 1/min: 2650

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 P68 134 3009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
: (3.45...3.65)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1325

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm³/ : 10.1...10.3

100H.: (9.9...10.5)

Dispersion cm³/ : 0.3

100H.: (0.6)

2nd speed 1/min: 325.0
Contr.-rod trav. m: 7.0...7.1
Del.quantity cm³/ : 1.1...1.5
100H.: (0.9...1.7)
Dispersion cm³/ : 0.3
100H.: (0.5)

SLEEVE POSITION

Control-lever position
Degree: -2
Speed 1/min: 700
Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1325
Charge press. hPa : 700
Del.quantity cm³/ : 101.0...103.0
100H.: (99.0...105.0)
Dispersion cm³/ : 3.50
100H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 26...34

Setting point:
Speed 1/min : 700
Contr.-rod trav.mm: 20.0

Testing:
1st c-rod trav.mm : 10.00
Speed 1/min : 1375...1385
2nd c-rod trav.mm : 4.00
Speed 1/min : 1445...1475
4th speed 1/min : 1550
C-rod trav.mm : 0.10...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 8...16
Setting point w/out aux. spring
Speed 1/min : 325
Contr.-rod trav.mm: 7.0

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.60
Speed 1/min : 325
C-rod trav.mm : 7.00...7.10

CONSTANT REGULATION

Speed 1/min : 340...450

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 700
Contr.-rod trav.mm: 11.00...11.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.50...9.60
2nd pressure hPa : 350
C-rod trav.mm : 10.10...10.40
3rd pressure hPa : 450
C-rod trav.mm : 10.70...10.80

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 700
Speed 1/min : 850
Del.quantity cm³/ : 93.0...97.0
100H.: (91.0...99.0)
Dispersion cm³/ : 3.50
100H.: (7.00)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm³/ : 57.0...59.0
100H.: (55.0...61.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 120.0...140.0
100H.: (117.0...143.0)

LOW IDLE

Speed 1/min : 325
Contr.-rod trav.mm: 7.00...7.10
Del.quantity cm3/ : 11.0...15.0
1000H.: (9.0...17.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 25
 Edition : 13.05.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 403 446 170
 Injection pump
 Pump designation : PES6MW100/720RS1144
 EP type number : 0 413 406 138
 Governor
 Governor design. : RQV300...1300MW69
 Governor no. : 0 420 083 102

Customer-spec. information
 Customer : DB

Engine : OM366A
 1st version kW : 125.0
 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.50
 Calibrating nozzle-holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

 Contr.-rod trav.mm: 11.00...11.10

 Del.quantity cm3/ : 8.2...8.4

 100H.: (8.0...8.6)

 Dispersion cm3/ : 0.3

 100H.: (0.6)

 2nd speed 1/min: 300.0
 Contr.-rod trav. m: 7.8...7.9
 Del.quantity cm3/ : 1.0...1.4
 100H.: (0.9...1.5)
 Dispersion cm3/ : 0.3
 100H.: (0.5)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1340
 Sleeve travel mm: 8.40...8.60
 2nd speed 1/min: 1450
 Sleeve travel mm: 8.70...9.10
 3rd speed 1/min: 600
 Sleeve travel mm: 3.90...4.50
 4th speed 1/min: 300
 Sleeve travel mm: 0.80...1.30

SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed 1/min: 1350
 Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1300
 Del.quantity cm3/ : 82.0...84.0
 1000H.: (80.0...86.0)
 Dispersion cm3/ : 3.50
 1000H.: (6.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 50...58

Testing:
1st c-rod trav.mm : 10.00
Speed 1/min : 1340...1350
2nd c-rod trav.mm : 4.00
Speed 1/min : 1425...1455
4th speed 1/min : 1550
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 7.8

Testing:
Speed 1/min : 100
C-rod trav.mm min : 10.20
Speed 1/min : 300
C-rod trav.mm : 7.80...7.90

CONSTANT REGULATION

Speed 1/min : 330...500

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300
C-rod trav.mm : 11.00...11.10
2nd speed 1/min : 750
C-rod trav.mm : 11.90...12.00
3rd speed 1/min : 700
C-rod trav.mm : 12.00...12.20
4th speed 1/min : 1100
C-rod trav.mm : 11.00...11.20

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 750
Del.quantity cm3/ : 79.0...82.0
1000H.: (76.5...84.5)
Dispersion cm3/ : 5.00
1000H.: (7.00)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 7.80...7.90

Del.quantity cm3/ : 10.0...14.0
1000H.: (9.0...15.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 20
Edition : 10.04.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 446 177
Injection pump
Pump designation : PES6MW100/720RS1139
EP type number : 0 413 406 134
Governor
Governor design. : RQV300...1300MW48
Governor no. : 0 420 083 066

Customer-spec. information
Customer : DB

Engine : OM366A

1st version kW : 125,0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm3/ : 8.2...8.4

100H.: (8.0...8.6)

Dispersion cm3/ : 0.35

100H.: (0.6)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.8...7.9
Del.quantity cm3/ : 1.0...1.4
100H.: (0.9...1.5)
Dispersion cm3/ : 0.35
100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1340
Sleeve travel mm: 8.50...8.70
2nd speed 1/min: 1450
Sleeve travel mm: 9.30...9.70
3rd speed 1/min: 500
Sleeve travel mm: 2.70...3.30
4th speed 1/min: 300
Sleeve travel mm: 1.20...1.70

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1350
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300
Del.quantity cm3/ : 82.0...84.0
1000H.: (80.0...86.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 50...58

H22

Testing:

1st c-rod trav.mm : 10.00
Speed 1/min : 1340...1350
2nd c-rod trav.mm : 4.00
Speed 1/min : 1425...1455
4th speed 1/min : 1550
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 7.85

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.70
Speed 1/min : 300
C-rod trav.mm : 7.80...7.90

CONSTANT REGULATION

Speed 1/min : 330...500

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300
C-rod trav.mm : 11.00...11.10
2nd speed 1/min : 800
C-rod trav.mm : 11.80...12.00
3rd speed 1/min : 585
C-rod trav.mm : 12.00...12.20
4th speed 1/min : 1100
C-rod trav.mm : 11.00...11.10

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800
Del.quantity cm3/ : 81.0...83.0
1000H.: (79.0...85.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)
Speed 1/min : 585
Del.quantity cm3/ : 77.5...80.5
1000H.: (75.0...83.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 300

Contr.-rod trav.mm: 7.80...7.90
Del.quantity cm3/ : 10.0...14.0
1000H.: (9.0...15.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 26
Edition : 13.05.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 446 177
Injection pump
Pump designation : PES6MW100/72ORS1144
EP type number : 0 413 406 138
Governor
Governor design. : RQV300...1300MW48
Governor no. : 0 420 083 066

Customer-spec. information
Customer : DB

Engine : OM366A

1st version kW : 125.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - ^o : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm3/ : 8.2...8.4

100H.: (8.0...8.6)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.8...7.9
Del.quantity cm3/ : 1.0...1.4
100H.: (0.9...1.5)
Dispersion cm3/ : 0.3
100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1340
Sleeve travel mm: 8.50...8.70
2nd speed 1/min: 1450
Sleeve travel mm: 9.30...9.70
3rd speed 1/min: 500
Sleeve travel mm: 2.70...3.30
4th speed 1/min: 300
Sleeve travel mm: 1.20...1.70

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1350
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1300
Del.quantity cm3/ : 82.0...84.0
1000H.: (80.0...86.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 50...58

Testing:

1st c-rod trav.mm : 10.00
Speed 1/min : 1340...1350
2nd c-rod trav.mm : 4.00
Speed 1/min : 1425...1455
4th speed 1/min : 1550
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 7.8

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.70
Speed 1/min : 300
C-rod trav.mm : 7.80...7.90

CONSTANT REGULATION

Speed 1/min : 330...500

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1300
C-rod trav.mm : 11.00...11.10
2nd speed 1/min : 800
C-rod trav.mm : 11.80...12.00
3rd speed 1/min : 585
C-rod trav.mm : 12.00...12.20
4th speed 1/min : 1100
C-rod trav.mm : 11.00...11.10

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800
Del.quantity cm3/ : 81.0...83.0
1000H.: (79.0...85.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)
Speed 1/min : 585
Del.quantity cm3/ : 77.5...80.5
1000H.: (75.0...83.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 7.80...7.90
Del.quantity cm3/ : 10.0...14.0
1000H.: (9.0...15.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 27
Edition : 13.05.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 403 446 179

Injection pump
Pump designation : PES6MW100/72ORS1144
EP type number : 0 413 406 138
Governor
Governor design. : RQV300...1300MW74
Governor no. : 0 420 083 112

Customer-spec. information
Customer : DB

Engine : OM366LA

1st version kW : 127.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values _____

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm3/ : 7.6...7.8

100H.: (7.4...8.0)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.8...7.9

Del.quantity cm3/ : 1.0...1.4

100H.: (0.9...1.5)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1340

Sleeve travel mm: 8.50...8.70

2nd speed 1/min: 1450

Sleeve travel mm: 9.50...9.70

3rd speed 1/min: 700

Sleeve travel mm: 3.90...4.50

4th speed 1/min: 300

Sleeve travel mm: 1.30...1.70

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1335

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Del.quantity cm3/ : 81.0...83.0

1000H.: (79.0...85.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 50...58

H28

Testing:

1st c-rod trav.mm : 10.00

Speed 1/min : 1340...1350

2nd c-rod trav.mm : 4.00

Speed 1/min : 1425...1455

4th speed 1/min : 1550

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 18...26

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 7.8

Testing:

Speed 1/min : 100

C-rod trav.mm min : 9.70

Speed 1/min : 300

C-rod trav.mm : 7.80...7.90

CONSTANT REGULATION

Speed 1/min : 330...600

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300

C-rod trav.mm : 11.00...11.10

2nd speed 1/min : 750

C-rod trav.mm : 11.70...11.80

3rd speed 1/min : 1125

C-rod trav.mm : 11.40...11.50

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 750

Del.quantity cm3/ : 68.0...70.0

1000H.: (65.0...73.0)

Dispersion cm3/ : 5.00

1000H.: (7.00)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 80.0...90.0

1000H.: (77.0...93.0)

Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 300

Contr.-rod trav.mm: 7.80...7.90

Del.quantity cm3/ : 10.0...14.0

1000H.: (9.0...15.0)

Dispersion cm³/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 34
Edition : 10.04.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 403 446 184

Injection pump
Pump designation : PES6MW100/72ORS1144
EP type number : 0 413 406 138
Governor
Governor design. : RQV300...1300MW48-3
Governor no. : 0 420 083 121

Customer-spec. information
Customer : DB

Engine : OM366A

1st version kW : 125.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Contr.-rod trav.mm: 19.00...21.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 10.90...11.00

Del.quantity cm3/ : 8.0...8.2

100H.: (7.8...8.4)

Dispersion cm3/ : 0.35

100H.: (0.6)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.8...7.9
Del.quantity cm3/ : 1.0...1.4
100H.: (0.9...1.5)
Dispersion cm3/ : 0.35
100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1340
Sleeve travel mm: 8.50...8.70
2nd speed 1/min: 1450
Sleeve travel mm: 9.30...9.70
3rd speed 1/min: 500
Sleeve travel mm: 2.70...3.30
4th speed 1/min: 300
Sleeve travel mm: 1.20...1.70

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1350
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1300
Del.quantity cm3/ : 80.0...82.0
1000H.: (78.0...84.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 50...58

J03

Testing:

1st c-rod trav.mm : 9.90
Speed 1/min : 1340...1350
2nd c-rod trav.mm : 4.00
Speed 1/min : 1425...1455
4th speed 1/min : 1550
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 7.8

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.30
Speed 1/min : 300
C-rod trav.mm : 7.80...7.90

CONSTANT REGULATION

Speed 1/min : 330...500

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1300
C-rod trav.mm : 10.90...11.00
2nd speed 1/min : 800
C-rod trav.mm : 11.60...11.80
3rd speed 1/min : 585
C-rod trav.mm : 11.80...12.00

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800
Del.quantity cm3/ : 77.5...79.5
1000H.: (75.5...81.5)
Dispersion cm3/ : 5.00
1000H.: (7.00)
Speed 1/min : 585
Del.quantity cm3/ : 74.5...77.5
1000H.: (72.0...80.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 7.80...7.90

Del.quantity cm3/ : 10.0...14.0
1000H.: (9.0...15.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CUM 8,3 A 2
Edition : 17.12.86
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 403 466 103

Injection pump
Pump designation : PES6MW100/120RS1137
EP type number : 0 413 406 131
Governor
Governor design. : RSV425...1100MW2A319
-2
Governor no. : 0 420 085 062

Customer-spec. information
Customer : CUMMINS/US

Engine : 6 CTA-8.3 L

1st version kW : 188.0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values _ _ _ _

START OF DELIVERY
Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
: (3.45...3.65)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 14.10...14.20

Del.quantity cm3/ : 14.2...14.4

100H.: (14.0...14.6)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 425.0
Contr.-rod trav. m: 7.8...7.9
Del.quantity cm3/ : 1.9...2.3
100H.: (1.6...2.5)
Dispersion cm3/ : 0.3
100H.: (0.5)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...1.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1100
Del.quantity cm3/ : 142.0...144.0
1000H.: (140.0...146.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 42...50

Testing:
1st c-rod trav.mm : 13.10
Speed 1/min : 1140...1150
2nd c-rod trav.mm : 4.00
Speed 1/min : 1215...1245
4th speed 1/min : 1300
C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

J06

Control-lever
position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min : 425
Contr.-rod trav.mm: 7.8

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 425
C-rod trav.mm : 7.80...7.90

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1100
C-rod trav.mm : 14.10...14.20
2nd speed 1/min : 750
C-rod trav.mm : 14.80...14.90

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 750
Del.quantity cm3/ : 148.5...150.5
1000H.: (146.5...152.5)
Dispersion cm3/ : 5.00
1000H.: (7.00)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 125.0...145.0
1000H.: (122.0...148.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 425
Contr.-rod trav.mm: 7.80...7.90
Del.quantity cm3/ : 19.0...23.0
1000H.: (16.5...25.5)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

Start-of-delivery mark at 10^o cam
rotation angle after start of delivery,
cylinder 1
Starting/full-load transition speed
from holding magnet = 500 1/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CUM 8,3 A 3
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 466 104
Injection pump
Pump designation : PES6MW100/12ORS1137
EP type number : 0 413 406 131
Governor
Governor design. : RSV400...1050MW2A319
-3
Governor no. : 0 420 085 074

Customer-spec. information
Customer : CUMMINS/US

Engine : 6 CTA-8.3 L

1st version kW : 165.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
: (3.45...3.65)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 12.10...12.20

Del.quantity cm3/ : 12.4...12.6

100H.: (12.2...12.8)

Dispersion cm3/ : 0.35

100H.: (0.6)

2nd speed 1/min: 400.0

Contr.-rod trav. m: 6.9...7.0

Del.quantity cm3/ : 1.6...2.0

100H.: (1.3...2.2)

Dispersion cm3/ : 0.35

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...1.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1050

Del.quantity cm3/ : 124.0...126.0

1000H.: (122.0...128.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 40...48

Testing:

1st c-rod trav.mm : 11.10

Speed 1/min : 1090...1100

2nd c-rod trav.mm : 4.00

Speed 1/min : 1150...1180

4th speed 1/min : 1250

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 19...27
Setting point w/out aux. spring
Speed 1/min : 400
Contr.-rod trav.mm: 6.95

Testing:
Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 400
C-rod trav.mm : 6.90...7.00

SET IDLE AUXILIARY SPRING
Contr.-rod trav.mm: 4.00

TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1050
C-rod trav.mm : 12.10...12.20
2nd speed 1/min : 750
C-rod trav.mm : 14.20...14.30

FUEL-DELIVERY CHARACTERISTICS
Speed 1/min : 750
Del.quantity cm3/ : 151.0...153.0
1000H.: (149.0...155.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 125.0...145.0
1000H.: (122.0...148.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 400
Contr.-rod trav.mm: 6.90...7.00
Del.quantity cm3/ : 16.0...20.0
1000H.: (13.5...22.5)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:
Start-of-delivery mark at 10° cam
rotation angle after start of delivery,
cylinder 1
Starting/full-load transition speed
from holding magnet = 500 1/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CUM 8,3 A 4
 Edition : 13.05.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 403 466 105
 Injection pump
 Pump designation : PES6MW100/120RS1137
 EP type number : 0 413 406 131
 Governor
 Governor design. : RSV400...1100MW2A319
 -4
 Governor no. : 0 420 085 080

Customer-spec. information
 Customer : CUMMINS/US

Engine : 6 CTA-8.3 L

1st version kW : 171.5
 Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
 : (3.45...3.65)

Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1100

 Contr.-rod trav.mm: 12.60...12.70

 Del.quantity cm3/ : 13.2...13.4

 100H.: (13.0...13.6)

 Dispersion cm3/ : 0.3

 100H.: (0.6)

2nd speed 1/min: 400.0
 Contr.-rod trav. m: 7.0...7.1
 Del.quantity cm3/ : 1.6...2.0
 100H.: (1.3...2.2)
 Dispersion cm3/ : 0.3
 100H.: (0.5)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Cont.-rod travelmm: 0.30...1.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1100
 Del.quantity cm3/ : 132.5...134.5
 1000H.: (130.5...136.5)
 Dispersion cm3/ : 3.50
 1000H.: (6.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 40...48

Testing:
 1st c-rod trav.mm : 11.60
 Speed 1/min : 1140...1150
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1200...1230
 4th speed 1/min : 1300
 C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 16...24
Setting point w/out aux. spring
Speed 1/min : 400
Contr.-rod trav.mm: 7.0

Testing:
Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 400
C-rod trav.mm : 7.00...7.10

SET IDLE AUXILIARY SPRING
Contr.-rod trav.mm: 4.00

TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1100
C-rod trav.mm : 12.60...12.70
2nd speed 1/min : 750
C-rod trav.mm : 13.70...13.80

FUEL-DELIVERY CHARACTERISTICS
Speed 1/min : 750
Del.quantity cm3/ : 141.0...143.0
1000H.: (139.0...145.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 125.0...145.0
1000H.: (122.0...148.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 400
Contr.-rod trav.mm: 7.00...7.10
Del.quantity cm3/ : 16.0...20.0
1000H.: (13.5...22.5)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:
Start-of-delivery mark at 10° cam
rotation angle after start of delivery,
cylinder 1
Starting/full-load transition speed
from holding magnet = 500 1/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 A 18
Edition : 13.05.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 474 002
Injection pump
Pump designation : PES4MW100/720RS1127
EP type number : 0 413 404 103
Governor
Governor design. : RSV350...1200MWOA322
Governor no. : 0 420 085 075

Customer-spec. information
Customer : DB

Engine : OM364A

1st version kW : 66.0
Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1200

Contr.-rod trav.mm: 11.70...11.80

Del.quantity cm3/ : 7.8...8.0

100H.: (7.6...8.2)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 6.8...7.4

Del.quantity cm3/ : 0.8...1.0

100H.: (0.6...1.4)

Dispersion cm3/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...1.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1200

Del.quantity cm3/ : 78.0...80.0

1000H.: (76.0...82.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 102...110

Testing:

1st c-rod trav.mm : 10.70

Speed 1/min : 1240...1245

2nd c-rod trav.mm : 4.00

Speed 1/min : 1322...1335

3rd c-rod trav.mm : 4.00

Speed 1/min : 1345...1375

4th speed 1/min : 1450

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 350
Contr.-rod trav.mm: 7.1

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 350
C-rod trav.mm : 6.80...7.40
C-rod trav.mm : 2.00
Speed 1/min : 500...560

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1200
C-rod trav.mm : 11.70...11.80
2nd speed 1/min : 600
C-rod trav.mm : 12.60...12.80
3rd speed 1/min : 700
C-rod trav.mm : 12.60...12.80
4th speed 1/min : 950
C-rod trav.mm : 12.20...12.40

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 68.0...70.0
1000H.: (66.0...72.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)
Speed 1/min : 900
Del.quantity cm3/ : 77.0...79.0
1000H.: (75.0...81.0)
Dispersion cm3/ : 5.00
1000H.: 7.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 85.0...95.0
1000H.: (82.0...98.0)

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6.80...7.40
Del.quantity cm3/ : 8.0...10.0
1000H.: (6.0...14.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 29
 Edition : 13.05.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 403 476 027
 Injection pump
 Pump designation : PES6MW100/720RS1144
 EP type number : 0 413 406 138
 Governor
 Governor design. : RSV350...1300MWOA316
 Governor no. : 0 420 085 047

Customer-spec. information
 Customer : DB

Engine : OM366A

1st version kW : 125.0
 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 10.70...10.80

Del.quantity cm3/ : 8.0...8.2

100H.: (7.8...8.4)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 7.0...7.6

Del.quantity cm3/ : 1.0...1.2

100H.: (0.8...1.4)

Dispersion cm3/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...1.00

Governor-spring reload

Notch setting x : 4.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Del.quantity cm3/ : 80.0...82.0

1000H.: (78.0...84.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 54...61

Testing:

1st c-rod trav.mm : 9.70

Speed 1/min : 1340...1345

2nd c-rod trav.mm : 4.00

Speed 1/min : 1380...1393

3rd c-rod trav.mm : 4.00

Speed 1/min : 1400...1430

4th speed 1/min : 1450

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 12...20
C-rod trav.mm : 2.00
Speed 1/min : 445...505

SET IDLE AUXILIARY SPRING

Speed 1/min : 350

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300
C-rod trav.mm : 10.70...10.80
2nd speed 1/min : 700
C-rod trav.mm : 12.30...12.40
3rd speed 1/min : 825
C-rod trav.mm : 11.90...12.10

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 700
Del.quantity cm3/ : 80.0...82.0
1000H.: (78.0...84.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)
Speed 1/min : 825
Del.quantity cm3/ : 80.5...82.5
1000H.: (77.5...85.5)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 7.00...7.60
Del.quantity cm3/ : 10.0...12.0
1000H.: (8.0...14.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 30
 Edition : 27.03.87
 Superceeded : 11.85
 Calibrating oil : ISO-4113
 Combination no. : 0 403 476 029
 Injection pump
 Pump designation : PES6MW100/72ORS1124
 EP type number : 0 413 406 118
 Governor
 Governor design. : RSV350...1200MW1A316
 -1
 Governor no. : 0 420 085 048

Customer-spec. information
 Customer : DB

Engine : OM366A

1st version kW : 110.0
 Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 30...32

Prestroke min : 3.70...3.80
 : (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1200

Contr.-rod trav.mm: 9.80...9.90

Del.quantity cm3/ : 7.6...7.8

100H.: (7.4...8.0)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 6.4...7.0

Del.quantity cm3/ : 1.0...1.2

100H.: (0.8...1.4)

Dispersion cm3/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...1.00

Governor-spring reload
 Notch setting x : 4.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1200

Del.quantity cm3/ : 76.0...78.0

1000H.: (74.0...80.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 52...60

Testing:

1st c-rod trav.mm : 8.80

Speed 1/min : 1240...1245

2nd c-rod trav.mm : 4.00

Speed 1/min : 1280...1293

3rd c-rod trav.mm : 4.00

Speed 1/min : 1300...1330

4th speed 1/min : 1360

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever

position degrees: 12...20

C-rod trav.mm : 2.00

Speed 1/min : 465...525

SET IDLE AUXILIARY SPRING

Speed 1/min : 350

Contr.-rod trav.mm: 6.40...7.00

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1150

C-rod trav.mm : 9.90...10.10

2nd speed 1/min : 750

C-rod trav.mm : 10.60...10.70

3rd speed 1/min : 950

C-rod trav.mm : 10.30...10.40

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm3/ : 66.0...68.0

1000H.: (64.0...70.0)

Dispersion cm3/ : 5.00

1000H.: (7.00)

Speed 1/min : 900

Del.quantity cm3/ : 76.0...78.0

1000H.: (73.0...81.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 80.0...90.0

1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 350

Contr.-rod trav.mm: 6.40...7.00

Del.quantity cm3/ : 10.0...12.0

1000H.: (8.0...14.0)

Dispersion cm3/ : 3.50

1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : PEN 6,1 P
 Edition : 09.03.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 403 476 046
 Injection pump
 Pump designation : PES6MW100/32ORS1132
 EP type number : 0 413 406 124
 Governor
 Governor design. : RSV32S...1400MW2A314
 -1
 Governor no. : 0 420 085 053
 Customer-spec. information
 Customer : VOLVO-PENTA

Engine : TD 61 A

1st version kW : 147.0
 Speed 1/min: 2800

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 2.00X6.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.90...3.00
 : (2.85...3.05)

Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1000
 Contr.-rod trav.mm: 10.90...11.00
 Del.quantity cm3/ : 8.7...8.9
 100H.: (8.5...9.1)
 Dispersion cm3/ : 0.3
 100H.: (0.6)
 2nd speed 1/min: 325.0
 Contr.-rod trav. m: 6.0...6.1
 Del.quantity cm3/ : 1.2...1.6
 100H.: (0.9...1.8)
 Dispersion cm3/ : 0.3
 100H.: (0.5)

SLEEVE POSITION

Control-lever position
 Degree: 3
 Speed 1/min: 800
 Cont.-rod travelmm: 0.30...1.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1000
 Charge press. hPa : 900
 Del.quantity cm3/ : 87.0...89.0
 1000H.: (85.0...91.0)
 Dispersion cm3/ : 3.50
 1000H.: (6.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 54...62

Testing:

1st c-rod trav.mm : 10.00
 Speed 1/min : 1440...1450
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1520...1540
 4th speed 1/min : 1650
 C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever

position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min : 325
Contr.-rod trav.mm: 5.5

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 325
C-rod trav.mm : 5.50...5.60

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 220
Contr.-rod trav.mm: 10.00...10.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.80...9.90
2nd pressure hPa : 330
C-rod trav.mm : 10.20...10.50
3rd pressure hPa : 900
C-rod trav.mm : 10.90...11.00

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 50.0...52.0
1000H.: (48.0...54.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...160.0
1000H.: (137.0...163.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 325
Contr.-rod trav.mm: 6.00...6.10
Del.quantity cm3/ : 12.0...16.0
1000H.: (9.5...18.5)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 22
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 476 054
Injection pump
Pump designation : PES6MW100/72ORS1139
EP type number : 0 413 406 134
Governor
Governor design. : RSV350...1200MW1A316
-2
Governor no. : 0 420 085 076

Customer-spec. information
Customer : DB

Engine : OM366A

1st version kW : 115.0
Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1200

Contr.-rod trav.mm: 11.80...11.90

Del.quantity cm3/ : 8.3...8.5

100H.: (8.1...8.7)

Dispersion cm3/ : 0.35

100H.: (0.6)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 7.0...7.6
Del.quantity cm3/ : 1.0...1.2
100H.: (0.7...1.5)
Dispersion cm3/ : 0.35
100H.: (0.5)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...1.00

Governor-spring reload
Notch setting x : 3.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1200
Del.quantity cm3/ : 83.0...85.0
1000H.: (81.0...87.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 64...72

Testing:
1st c-rod trav.mm : 10.80
Speed 1/min : 1240...1245
2nd c-rod trav.mm : 4.00
Speed 1/min : 1285...1298
3rd c-rod trav.mm : 4.00
Speed 1/min : 1335...1365
4th speed 1/min : 1450

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 7.3

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.00

Speed 1/min : 350

C-rod trav.mm : 7.00...7.60

C-rod trav.mm : 2.00

Speed 1/min : 515...585

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1200

C-rod trav.mm : 11.80...11.90

2nd speed 1/min : 750

C-rod trav.mm : 12.30...12.40

3rd speed 1/min : 1000

C-rod trav.mm : 11.90...12.10

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 750

Del.quantity cm3/ : 81.0...83.0

1000H.: (79.0...85.0)

Dispersion cm3/ : 5.00

1000H.: (7.00)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 80.0...90.0

1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 350

Contr.-rod trav.mm: 7.00...7.60

Del.quantity cm3/ : 10.0...12.0

1000H.: (7.0...15.0)

Dispersion cm3/ : 3.50

1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 31
Edition : 13.05.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 476 054
Injection pump
Pump designation : PES6MW100/72ORS1144
EP type number : 0 413 406 138
Governor
Governor design. : RSV350...1200MW1A316
-2
Governor no. : 0 420 085 076
Customer-spec. information
Customer : DB

Engine : OM366A
1st version kW : 115.0
Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 000
Inlet press., bar : 1.50
Calibrating nozzle-holder
assembly : 0 681 343 009
Opening
pressure, bar : 172...175
Test inj. tubing : 1 680 750 008
Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600
(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32
Prestroke min : 3.70...3.80
: (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1200
Contr.-rod trav.mm: 11.80...11.90
Del.quantity cm3/ : 8.3...8.5
100H.: (8.1...8.7)
Dispersion cm3/ : 0.3
100H.: (0.6)
2nd speed 1/min: 350.0
Contr.-rod trav. m: 7.0...7.6
Del.quantity cm3/ : 1.0...1.2
100H.: (0.7...1.5)
Dispersion cm3/ : 0.3
100H.: (0.5)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...1.00

Governor-spring reload
Notch setting x : 3.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1200
Del.quantity cm3/ : 83.0...85.0
1000H.: (81.0...87.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 64...72

Testing:
1st c-rod trav.mm : 10.80
Speed 1/min : 1240...1245
2nd c-rod trav.mm : 4.00
Speed 1/min : 1285...1298
3rd c-rod trav.mm : 4.00
Speed 1/min : 1335...1365
4th speed 1/min : 1450

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 7.3

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.00

Speed 1/min : 350

C-rod trav.mm : 7.00...7.60

C-rod trav.mm : 2.00

Speed 1/min : 515...585

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1200

C-rod trav.mm : 11.80...11.90

2nd speed 1/min : 750

C-rod trav.mm : 12.30...12.40

3rd speed 1/min : 1000

C-rod trav.mm : 11.90...12.10

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 750

Del.quantity cm3/ : 81.0...83.0

1000H.: (79.0...85.0)

Dispersion cm3/ : 5.00

1000H.: (7.00)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 80.0...90.0

1000H.: (77.0...93.0)

Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350

Contr.-rod trav.mm: 7.00...7.60

Del.quantity cm3/ : 10.0...12.0

1000H.: (7.0...15.0)

Dispersion cm3/ : 3.50

1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 23
 Edition : 09.03.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 403 476 055
 Injection pump
 Pump designation : PES6MW100/72ORS1139
 EP type number : 0 413 406 134
 Governor
 Governor design. : RSV350...1200MW1A316
 -3
 Governor no. : 0 420 085 077

Customer-spec. information
 Customer : DB

Engine : OM366A

1st version kW : 92.0
 Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1200

Contr.-rod trav.mm: 9.60...9.70

Del.quantity cm3/ : 6.6...6.8

100H.: (6.4...7.0)

Dispersion cm3/ : 0.35

100H.: (0.6)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 6.3...6.9

Del.quantity cm3/ : 1.0...1.2

100H.: (0.7...1.5)

Dispersion cm3/ : 0.35

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...1.00

Governor-spring reload

Notch setting x : 15.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1200

Del.quantity cm3/ : 66.0...68.0

1000H.: (64.0...70.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 58...66

Testing:

1st c-rod trav.mm : 9.10

Speed 1/min : 1240...1245

2nd c-rod trav.mm : 4.00

Speed 1/min : 1263...1276

3rd c-rod trav.mm : 4.00

Speed 1/min : 1290...1320

4th speed 1/min : 1450

C-rod trav.mm : 0.30...1.70
Sth speed 1/min : 1240...1255
C-rod trav.mm : 8.60

LOWEST RATED SPEED 1

Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 6.6

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 350
C-rod trav.mm : 6.30...6.90
C-rod trav.mm : 2.00
Speed 1/min : 415...475

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1200
C-rod trav.mm : 10.10...10.20
2nd speed 1/min : 850
C-rod trav.mm : 10.70...10.90
3rd speed 1/min : 950
C-rod trav.mm : 10.40...10.60

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800
Del.quantity cm3/ : 68.0...70.0
1000H.: (66.0...72.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6.30...6.90
Del.quantity cm3/ : 10.0...12.0
1000H.: (7.0...15.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 32
 Edition : 05.06.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 403 476 055
 Injection pump
 Pump designation : PES6MW100/72ORS1144
 EP type number : 0 413 406 138
 Governor
 Governor design. : RSV350...1200MW1A316
 -3
 Governor no. : 0 420 085 077

Customer-spec. information
 Customer : DB

Engine : OM366A

1st version kW : 92.0
 Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1200

Contr.-rod trav.mm: 9.60...9.70

Del.quantity cm3/ : 6.6...6.8

100H.: (6.4...7.0)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 6.3...6.9

Del.quantity cm3/ : 1.0...1.2

100H.: (0.7...1.5)

Dispersion cm3/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...1.00

Governor-spring reload
 Notch setting x : 15.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1200

Del.quantity cm3/ : 66.0...68.0

1000H.: (64.0...70.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 58...66

Testing:

1st c-rod trav.mm : 9.10

Speed 1/min : 1240...1245

2nd c-rod trav.mm : 4.00

Speed 1/min : 1263...1276

3rd c-rod trav.mm : 4.00

Speed 1/min : 1290...1320

4th speed 1/min : 1450

C-rod trav.mm : 0.30...1.70
5th speed 1/min : 1240...1255
C-rod trav.mm : 8.60

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 6.6

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 350
C-rod trav.mm : 6.30...6.90
C-rod trav.mm : 2.00
Speed 1/min : 415...475

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1200
C-rod trav.mm : 9.60...9.70
2nd speed 1/min : 800
C-rod trav.mm : 10.50...10.60
3rd speed 1/min : 950
C-rod trav.mm : 9.90...10.10

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800
Del.quantity cm3/ : 68.0...70.0
1000H.: (66.0...72.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6.30...6.90
Del.quantity cm3/ : 10.0...12.0
1000H.: (7.0...15.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 24
 Edition : 03.04.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 403 476 056
 Injection pump
 Pump designation : PES6MW100/72ORS1139
 EP type number : 0 413 406 134
 Governor
 Governor design. : RSV350...1200MW1A316
 -4
 Governor no. : 0 420 085 078

Customer-spec. information
 Customer : DB

Engine : OM366A

1st version kW : 100.0
 Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness : 6.00X2.00X600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1200

Contr.-rod trav.mm: 11.40...11.50

Del.quantity cm3/ : 7.5...7.7

100H.: (7.3...7.9)

Dispersion cm3/ : 0.35

100H.: (0.6)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 6.1...6.7

Del.quantity cm3/ : 1.0...1.2

100H.: (0.7...1.5)

Dispersion cm3/ : 0.35

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...1.00

Governor-spring reload
 Notch setting x : 3.50

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1200

Del.quantity cm3/ : 75.0...77.0

1000H.: (73.0...79.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 51...59

Testing:

1st c-rod trav.mm : 10.50

Speed 1/min : 1240...1245

2nd c-rod trav.mm : 4.00

Speed 1/min : 1271...1284

3rd c-rod trav.mm : 4.00

Speed 1/min : 1290...1320

4th speed 1/min : 1450

C-rod trav.mm : 0.30...1.70
5th speed 1/min : 1240...1255
C-rod trav.mm : 9.00

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 6.4

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 350
C-rod trav.mm : 6.10...6.70
C-rod trav.mm : 2.00
Speed 1/min : 415...475

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1200
C-rod trav.mm : 10.00...10.10
2nd speed 1/min : 800
C-rod trav.mm : 10.80...10.90
3rd speed 1/min : 900
C-rod trav.mm : 10.80...10.90
4th speed 1/min : 1050
C-rod trav.mm : 10.30...10.50

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800
Del.quantity cm3/ : 73.0...75.0
1000H.: (71.0...78.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6.10...6.70
Del.quantity cm3/ : 10.0...12.0
1000H.: (7.0...15.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 33
 Edition : 05.06.87
 Superseded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 403 476 056
 Injection pump
 Pump designation : PES6MW100/720RS1144
 EP type number : 0 413 406 138
 Governor
 Governor design. : RSV350...1200MW1A316
 -4
 Governor no. : 0 420 085 078
 Customer-spec. information
 Customer : DB

Engine : OM366A

1st version kW : 100.0
 Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1200
 Contr.-rod trav.mm: 10.00...10.10
 Del.quantity cm3/ : 7.5...7.7
 100H.: (7.3...7.9)
 Dispersion cm3/ : 0.3
 100H.: (0.6)
 2nd speed 1/min: 350.0
 Contr.-rod trav. m: 6.1...6.7
 Del.quantity cm3/ : 1.0...1.2
 100H.: (0.7...1.5)
 Dispersion cm3/ : 0.3
 100H.: (0.5)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Cont.-rod travelmm: 0.30...1.00

Governor-spring reload
 Notch setting x : 3.50

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1200
 Del.quantity cm3/ : 75.0...77.0
 1000H.: (73.0...79.0)
 Dispersion cm3/ : 3.50
 1000H.: (6.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 51...59

Testing:
 1st c-rod trav.mm : 10.50
 Speed 1/min : 1240...1245
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1271...1284
 3rd c-rod trav.mm : 4.00
 Speed 1/min : 1290...1320
 4th speed 1/min : 1450

C-rod trav.mm : 0.30...1.70
Sth speed 1/min : 1240...1255
C-rod trav.mm : 9.00

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 6.4

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 350
C-rod trav.mm : 6.10...6.70
C-rod trav.mm : 2.00
Speed 1/min : 415...475

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1200
C-rod trav.mm : 10.00...10.10
2nd speed 1/min : 800
C-rod trav.mm : 10.90...11.00
3rd speed 1/min : 900
C-rod trav.mm : 10.90...11.00
4th speed 1/min : 1050
C-rod trav.mm : 10.30...10.50

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800
Del.quantity cm3/ : 73.0...75.0
1000H.: (71.0...78.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6.10...6.70
Del.quantity cm3/ : 10.0...12.0
1000H.: (7.0...15.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 13.4 D
Edition : 05.06.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 548 007
Injection pump
Pump designation : PE8MW100/72QLS1118
EP type number : 0 413 508 102
Governor
Governor design. : RQV300...1150MW56
Governor no. : 0 420 083 075

Customer-spec. information
Customer : KHD

Engine : BF8L513

1st version kW : 222.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 740 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.10...3.20
: (3.05...3.25)

Contr.-rod trav.mm: 9.00...12.00

K03

Cam sequence : 1- 8- 7- 2- 6- 5-
4- 3

SD ang. spacing°CS: 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1150
Contr.-rod trav.mm: 12.10...12.20
Del.quantity cm3/ : 12.9...13.1
100H.: (12.7...13.3)
Dispersion cm3/ : 0.3
100H.: (0.6)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 6.9...7.0
Del.quantity cm3/ : 1.6...2.0
100H.: (1.3...2.2)
Dispersion cm3/ : 0.3
100H.: (0.5)

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1175
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1150
Charge press. hPa : 800
Del.quantity cm3/ : 129.0...131.0
1000H.: (127.0...133.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 51...59

Testing:
1st c-rod trav.mm : 12.60
Speed 1/min : 1190...1200
2nd c-rod trav.mm : 4.00
Speed 1/min : 1300...1330
4th speed 1/min : 1400
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 6.9
C-rod trav.mm min : 8.50
Speed 1/min : 300
C-rod trav.mm : 6.90...7.00

CONSTANT REGULATION

Speed 1/min : 330...400

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1150
C-rod trav.mm : 13.60...13.70
2nd speed 1/min : 700
C-rod trav.mm : 14.20...14.30
3rd speed 1/min : 900
C-rod trav.mm : 13.80...14.10

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 360
Contr.-rod trav.mm: 13.90...14.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 13.2...13.30
2nd pressure hPa : 260
C-rod trav.mm : 13.40...13.70
3rd pressure hPa : 800
C-rod trav.mm : 14.20...14.30

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 800
Speed 1/min : 700
Del.quantity cm3/ : 133.0...135.0
1000H.: (131.0...137.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)
Charge press. hPa : -
Speed 1/min : 450
Del.quantity cm3/ : 104.0...106.0
1000H.: (101.5...108.5)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...150.0
1000H.: (137.0...153.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 6.90...7.00
Del.quantity cm3/ : 16.0...20.0
1000H.: (13.5...22.5)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 13,4 D4
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 548 014
Injection pump
Pump designation : PE8MW100/72OLS1128
EP type number : 0 413 508 103
Governor
Governor design. : RQ300...1150MW63-2
Governor no. : 0 420 082 019

Customer-spec. information
Customer : KHD

Engine : BF 8L 513

1st version kW : 235.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 740 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.10...3.20
: (3.05...3.25)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 8- 7- 2- 6- 5-
4- 3

SD ang. spacing^oCS: 0-45-90-135-180-225-
270-315
Tolerance + - ^o : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 13.90...14.00

Del.quantity cm3/ : 14.1...14.3

100H.: (13.9...14.5)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.7...7.8
Del.quantity cm3/ : 1.3...1.7
100H.: (1.1...1.9)
Dispersion cm3/ : 0.3
100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1280
Sleeve travel mm: 9.00...9.80
2nd speed 1/min: 1150
Sleeve travel mm: 6.60...6.80
3rd speed 1/min: 650
Sleeve travel mm: 5.80...6.20
4th speed 1/min: 300
Sleeve travel mm: 1.20...2.00

SLEEVE POSITION

Control-lever position
Degree: -2
Speed 1/min: 600
Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1150
Charge press. hPa : 900
Del.quantity cm3/ : 141.0...143.0
1000H.: (139.0...145.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

K06

1st version
Control-lever
position degrees: 34...42

Setting point:
Speed 1/min : 600
Contr.-rod trav.mm: 20.0

Testing:
1st c-rod trav.mm : 13.00
Speed 1/min : 1190...1200
2nd c-rod trav.mm : 4.00
Speed 1/min : 1285...1315
4th speed 1/min : 1370
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 8...16
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 7.7

Testing:
Speed 1/min : 100
C-rod trav.mm min : 9.30
Speed 1/min : 300
C-rod trav.mm : 7.70...7.80

CONSTANT REGULATION

Speed 1/min : 330...400

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1150
C-rod trav.mm : 13.90...14.00
2nd speed 1/min : 700
C-rod trav.mm : 14.90...15.00
3rd speed 1/min : 950
C-rod trav.mm : 14.20...14.50

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 480
Contr.-rod trav.mm: 14.40...14.50

Measurement

Speed 1/min : 500
1st pressure hPa : 900
C-rod trav.mm : 14.90...15.00
2nd pressure hPa : -
C-rod trav.mm : 12.70...12.80
3rd pressure hPa : 330
C-rod trav.mm : 13.20...13.50

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900

Speed 1/min : 700

Del.quantity cm3/ : 153.0...155.0

1000H.: (151.0...157.0)

Dispersion cm3/ : 5.00

1000H.: (7.00)

Charge press. hPa : -

Speed 1/min : 450

Del.quantity cm3/ : 107.0...109.0

1000H.: (105.0...111.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 135.0...155.0

1000H.: (132.0...158.0)

LOW IDLE

Speed 1/min : 300

Contr.-rod trav.mm: 7.70...7.80

Del.quantity cm3/ : 13.0...17.0

1000H.: (11.0...19.0)

Dispersion cm3/ : 3.50

1000H.: (5.50)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 12,7 T6
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 403 548 018

Injection pump
Pump designation : PE8MW100/72OLS1117
EP type number : 0 413 508 101
Governor
Governor design. : RQV300...1150MW75
Governor no. : 0 420 083 113

Customer-spec. information
Customer : KHD

Engine : F 8L 513

1st version kW : 188.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 740 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.10...3.20
 : (3.05...3.25)
Contr.-rod trav.mm: 9.00...12.00

K08

Cam sequence : 1- 8- 7- 2- 6- 5-
 4- 3

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.50...11.60

Del.quantity cm3/ : 10.5...10.7

100H.: (10.3...10.9)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.0...8.1

Del.quantity cm3/ : 1.1...1.5

100H.: (0.9...1.7)

Dispersion cm3/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1170

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Del.quantity cm3/ : 105.0...107.0

1000H.: (103.0...109.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 51...59

Testing:

1st c-rod trav.mm : 10.50

Speed 1/min : 1190...1200

2nd c-rod trav.mm : 4.50

Speed 1/min : 1260...1290

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 8.0

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.70
Speed 1/min : 300
C-rod trav.mm : 8.00...8.10

CONSTANT REGULATION

Speed 1/min : 320...420

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1150
C-rod trav.mm : 11.50...11.60
2nd speed 1/min : 650
C-rod trav.mm : 12.70...12.80
3rd speed 1/min : 900
C-rod trav.mm : 12.00...12.30

SWITCH-OVER POINT

Speed 1/min : 220 (250)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 650
Del.quantity cm3/ : 113.0...115.0
1000H.: (111.0...117.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...140.0
1000H.: (127.0...143.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 8.00...8.10
Del.quantity cm3/ : 11.0...15.0
1000H.: (9.0...17.0)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 13,4 DS
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 548 019
Injection pump
Pump designation : PE8MW100/720LS1118
EP type number : 0 413 508 102
Governor
Governor design. : RQV425...900MW76
Governor no. : 0 420 083 114

Customer-spec. information
Customer : KHD

Engine : BF8LS13

1st version kW : 160.0
Speed 1/min: 1800

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 740 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.10...3.20
: (3.05...3.25)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 8- 7- 2- 6- 5-
4- 3

SD ang. spacing°CS: 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 900

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm3/ : 10.3...10.5

100H.: (10.1...10.7)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 425.0

Contr.-rod trav. m: 6.0...6.1

Del.quantity cm3/ : 1.3...1.7

100H.: (1.1...1.9)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 950

Sleeve travel mm: 8.70...8.80

2nd speed 1/min: 1000

Sleeve travel mm: 9.70...10.10

3rd speed 1/min: 600

Sleeve travel mm: 3.90...4.50

4th speed 1/min: 425

Sleeve travel mm: 1.60...2.00

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 925

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 900

Del.quantity cm3/ : 103.0...105.0

1000H.: (101.0...107.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 51...59

Testing:

1st c-rod trav.mm : 10.00
Speed 1/min : 940...950
2nd c-rod trav.mm : 4.50
Speed 1/min : 985...1015

LOWEST RATED SPEED I

Control-lever
position degrees: 20...28
Setting point w/out aux. spring
Speed 1/min : 425
Contr.-rod trav.mm: 6.0
Speed 1/min : 425
C-rod trav.mm : 6.00...6.10

CONSTANT REGULATION

Speed 1/min : 435...520

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 900
C-rod trav.mm : 11.00...11.10
2nd speed 1/min : 600
C-rod trav.mm : 11.60...11.70
3rd speed 1/min : 750
C-rod trav.mm : 11.20...11.50

SWITCH-OVER POINT

Speed 1/min : 360 (400)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 109.0...111.0
1000H.: (107.5...113.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...150.0
1000H.: (137.0...153.0)

LOW IDLE

Speed 1/min : 425
Contr.-rod trav.mm: 6.00...6.10
Del.quantity cm3/ : 13.0...17.0
1000H.: (11.0...19.0)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 13.4 D7
Edition : 13.05.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 548 020
Injection pump
Pump designation : PE8MW100/72OLS1128
EP type number : 0 413 508 103
Governor
Governor design. : RQV300...1150MW56-1
Governor no. : 0 420 083 125

Customer-spec. information
Customer : KHD

Engine : BF 8L 513

1st version kW : 235.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 740 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.10...3.20
: (3.05...3.25)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 8- 7- 2- 6- 5-
4- 3

SD ang. spacing°CS: 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 12.80...12.90

Del.quantity cm3/ : 14.1...14.3

100H.: (13.9...14.5)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.5...6.6

Del.quantity cm3/ : 1.3...1.7

100H.: (1.1...1.9)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1280

Sleeve travel mm: 9.00...9.80

2nd speed 1/min: 1150

Sleeve travel mm: 6.60...6.80

3rd speed 1/min: 650

Sleeve travel mm: 5.80...6.20

4th speed 1/min: 300

Sleeve travel mm: 1.20...2.00

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1175

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Charge press. hPa : 900

Del.quantity cm3/ : 141.0...143.0

1000H.: (139.0...145.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 50...58

Testing:
1st c-rod trav.mm : 11.80
Speed 1/min : 1190...1200
2nd c-rod trav.mm : 4.00
Speed 1/min : 1300...1330
4th speed 1/min : 1370
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I
Control-lever
position degrees: 14...22
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 6.5

Testing:
Speed 1/min : 100
C-rod trav.mm min : 8.10
Speed 1/min : 300
C-rod trav.mm : 6.50...6.60

CONSTANT REGULATION
Speed 1/min : 320...400

TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1150
C-rod trav.mm : 12.80...12.90
2nd speed 1/min : 700
C-rod trav.mm : 13.80...13.90
3rd speed 1/min : 950
C-rod trav.mm : 13.10...13.40

compensator (LDA,ADA,ALDA)

1st version
Setting
Speed 1/min : 500
Pressure hPa : 480
Contr.-rod trav.mm: 13.40...13.50

Measurement
Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 11.70...11.80
2nd pressure hPa : 330
C-rod trav.mm : 12.50...12.80
3rd pressure hPa : 900
C-rod trav.mm : 13.80...13.90

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 900

Speed 1/min : 700
Del.quantity cm3/ : 153.0...155.0
1000H.: (151.0...157.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)
Charge press. hPa : -
Speed 1/min : 450
Del.quantity cm3/ : 107.0...109.0
1000H.: (105.0...111.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 135.0...155.0
1000H.: (132.0...158.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 6.50...6.60
Del.quantity cm3/ : 13.0...17.0
1000H.: (11.0...19.0)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:
Test electrically-released starting
quantity (EES) with 12 volts

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 13,4 D8
Edition : 13.05.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 548 021
Injection pump
Pump designation : PE8MW100/72OLS1118
EP type number : 0 413 508 102
Governor
Governor design. : RQV300...1150MW56-2
Governor no. : 0 420 083 127

Customer-spec. information
Customer : KHD

Engine : BF 8L 513

1st version kW : 235.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 740 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.10...3.20
 : (3.05...3.25)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 8- 7- 2- 6- 5
 4- 3

SD ang. spacing°CS: 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1150
Contr.-rod trav.mm: 13.20...13.30
Del.quantity cm3/ : 13.9...14.1
100H.: (13.7...14.3)
Dispersion cm3/ : 0.3
100H.: (0.6)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 6.9...7.0
Del.quantity cm3/ : 1.3...1.7
100H.: (1.1...1.9)
Dispersion cm3/ : 0.3
100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1200
Sleeve travel mm: 8.50...8.70
2nd speed 1/min: 1300
Sleeve travel mm: 9.80...10.20
3rd speed 1/min: 600
Sleeve travel mm: 3.90...4.50
4th speed 1/min: 300
Sleeve travel mm: 1.30...1.70

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1200
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1150
Charge press. hPa : 900
Del.quantity cm3/ : 139.0...141.0
1000H.: (137.0...143.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 50...58

Testing:
1st c-rod trav.mm : 12.20
Speed 1/min : 1190...1200
2nd c-rod trav.mm : 4.00
Speed 1/min : 1305...1335
4th speed 1/min : 1370
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I
Control-lever
position degrees: 14...22
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 6.9

Testing:
Speed 1/min : 100
C-rod trav.mm min : 8.50
Speed 1/min : 300
C-rod trav.mm : 6.90...7.00

CONSTANT REGULATION
Speed 1/min : 320...500

TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1150
C-rod trav.mm : 13.20...13.30
2nd speed 1/min : 750
C-rod trav.mm : 13.80...13.90
3rd speed 1/min : 900
C-rod trav.mm : 13.40...13.60

compensator (LDA,ADA,ALDA)

1st version
Setting
Speed 1/min : 500
Pressure hPa : 450
Contr.-rod trav.mm: 13.50...13.80

Measurement
Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 12.20...12.30
2nd pressure hPa : 300
C-rod trav.mm : 12.70...12.80
3rd pressure hPa : 900
C-rod trav.mm : 13.80...13.90

SWITCH-OVER POINT
Speed 1/min : 220 (250)

FUEL-DELIVERY CHARACTERISTICS

K15

1st version
Charge press. hPa : 900
Speed 1/min : 750
Del.quantity cm3/ : 146.0...148.0
1000H.: (144.0...150.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)
Charge press. hPa : -
Speed 1/min : 450
Del.quantity cm3/ : 111.0...113.0
1000H.: (109.0...115.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...150.0
1000H.: (137.0...153.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 6.90...7.00
Del.quantity cm3/ : 13.0...17.0
1000H.: (11.0...19.0)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MTU 47,5 H1
 Edition : 9.3.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 406 030 002
 Injection pump
 Pump designation : PE12ZWM160/120RS2012
 EP type number : 0 416 060 003
 Governor
 Governor design. : RQUV300...1050ZWA65R
 Governor no. : 0 422 409 036

Customer-spec. information
 Customer : MTU

Engine : 12 V 396-03

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 40...45
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 026

Opening
 pressure, bar : 220...223

Test inj. tubing : 1 680 750 016

Outside diameter
 x Wall thickness : 8.00x2.00x1500
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values _ _ _ _

START OF DELIVERY

Prestroke mm : 2.50...2.60
 : (2.45...2.65)
 Contr.-rod trav.mm: 12.0
 Cam sequence : 12-9-4-5-8-11-2-3-10
 -7-6-1

SD ang. spacing^oCS: 0-15-60-75-120-135-
180-195-240-255-300-
315
Tolerance + - ^o : 0.50(0.75)

SD mark cyl. no. : 12

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 18.00

Del.quantity cm³/ : 63.0...64.4

100H.: 62.5...64.9

Dispersion cm³/ : 2.0

100H.: (3.0)

2nd speed 1/min: 1000

Contr.-rod trav. m: 9.00

Del.quantity cm³/ : 21.2...24.0

100H.: (20.7...24.5)

Dispersion cm³/ : 2.8

100H.: (4.2)

3rd speed 1/min: 350

Contr.-rod trav.mm: 9.00

Del.quantity cm³/ : 13.2...15.6

100H.: (12.7...16.1)

Dispersion cm³/ : 1.6

100H.: (2.4)

SLEEVE POSITION

Control-lever position

Degree: 79...85

Speed 1/min: 1050

Contr.-rod travelmm: 18.00

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 79...85

Testing:

1st c-rod trav.mm : 18.00

Speed 1/min : 1050

2nd c-rod trav.mm : 17.00

Speed 1/min : 1055...1075

3rd c-rod trav.mm : 4.00

Speed 1/min : 1150...1210

4th speed 1/min : 1250

C-rod trav.mm : 0.00...2.00

SET IDLE CONTROL-LEVER

POSITION

Speed 1/min : 300

Contr.-rod trav.mm: 8.00

Control-lever

position degrees: 19...24

LOWEST RATED SPEED I

Speed 1/min : 200

C-rod trav.mm : 10.80...14.20

C-rod trav.mm : 8.00

Speed 1/min : 300

C-rod trav.mm : 0.01

Speed 1/min : 485...590

Remarks:

Stamp prestroke dimension into pump housing

Stamp dimension "0". Control-rod travel "0" corresponds to 1.0 mm clearance of the control-collar capsule from the end-face stop plate.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CUM 8,3 B 1
Edition : 21.05.87
Superceeded : 10.86
Calibrating oil : ISO-4113
Combination no. : 9 400 083 451
Injection pump
Pump designation : PES6A100D320/3RS2691
-2
EP type number : 9 410 230 028
Governor
Governor design. : RQV350...1100AB1218R
Governor no. : 9 420 080 214

Customer-spec. information
Customer : CUMMINS

Engine : 6 CT/8.3 1

1st version kW : 210.0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 9.00...12.00
Difference ° CS : 3.00...4.00

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 12.80...12.90

Del.quantity cm3/ : 11.9...12.1

100H.: (11.7...12.3)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 5.9...6.1

Del.quantity cm3/ : 1.3...1.7

100H.: (1.0...1.9)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1150

Sleeve travel mm: 8.50...8.60

2nd speed 1/min: 350

Sleeve travel mm: 2.20...2.60

3rd speed 1/min: 500

Sleeve travel mm: 3.60...3.90

4th speed 1/min: 800

Sleeve travel mm: 5.30...5.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1140

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Charge press. hPa : 800

Del. quantity cm³/ : 119.0...121.0
1000H.: (117.0...123.0)
Dispersion cm³/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 59...67

Testing:

1st c-rod trav.mm : 11.80
Speed 1/min : 1140...1150
2nd c-rod trav.mm : 4.00
Speed 1/min : 1240...1270
4th speed 1/min : 1370
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 11...19

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.00
Speed 1/min : 350
C-rod trav.mm : 5.90...6.10
C-rod trav.mm : 2.00
Speed 1/min : 630...690

CONSTANT REGULATION

Speed 1/min : 350...500

TORQUE CONTROL

Dimension a mm : 0.70
Torque-control curve - 1st version
1st speed 1/min : 1100
C-rod trav.mm : 12.80...12.90
2nd speed 1/min : 700
C-rod trav.mm : 13.50...13.60
3rd speed 1/min : 900
C-rod trav.mm : 13.30...13.50
4th speed 1/min : 950
C-rod trav.mm : 13.10...13.30

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 800
Contr.-rod trav.mm: 13.50...13.60

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav/mm : 11.40...11.50
2nd pressure hPa : 575

C-rod trav.mm : 12.90...13.10
3rd pressure hPa : 475
C-rod trav.mm : 12.00...12.20

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 800
Speed 1/min : 700
Del. quantity cm³/ : 125.5...128.5
1000H.: (123.0...131.0)
Charge press. hPa : 800
Speed 1/min : 900
Del. quantity cm³/ : 128.5...131.5
1000H.: (126.0...134.0)
Charge press. hPa : -
Speed 1/min : 500
Del. quantity cm³/ : 86.0...88.0
1000H.: (84.0...90.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 168.0...182.0
1000H.: (-)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 5.90...6.10
Del. quantity cm³/ : 13.0...17.0
1000H.: (10.5...19.5)
Dispersion cm³/ : 3.50
1000H.: (5.50)

Remarks:

Start-of-delivery mark at 10° cam
rotation angle after start of delivery,
cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CUM 8,3 A 5
 Edition : 21.05.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 9 400 083 454
 Injection pump
 Pump designation : PES6A100D320/3RS2691
 EP type number : 9 410 230 025
 Governor
 Governor design. : RSV400...900A7C2209-1R
 Governor no. : 9 420 083 232
 Customer-spec. information
 Customer : CUMMINS

Engine : 6 CT

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 047
 Inlet press., bar : 1.00
 Calibrating nozzle-holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 9.00...12.00
 Difference ° CS : 3.00...4.00

BASIC SETTING

1st speed 1/mi: 900

 Contr.-rod trav.mm: 12.70...12.80

 Del.quantity cm3/ : 12.9...13.0

 100H.: (12.7...13.2)

 Dispersion cm3/ : 0.3

 100H.: (0.6)

 2nd speed 1/min: 400.0
 Contr.-rod trav. m: 5.9...6.1
 Del.quantity cm3/ : 1.6...2.0
 100H.: (1.4...2.3)
 Dispersion cm3/ : 0.3
 100H.: (0.5)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload
 Notch setting x : 5.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 900
 Del.quantity cm3/ : 129.0...130.0
 1000H.: (127.0...132.0)
 Dispersion cm3/ : 3.50
 1000H.: (6.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 53...61

Testing:
 1st c-rod trav.mm : 11.70
 Speed 1/min : 940...950
 2nd c-rod trav.mm : 4.00

Speed 1/min : 970...1000
4th speed 1/min : 1100
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 23...31
Setting point w/out aux. spring
Speed 1/min : 400
Contr.-rod trav.mm: 5.5

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 400
C-rod trav.mm : 5.90...6.10
C-rod trav.mm : 2.00
Speed 1/min : 420...480

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 900
C-rod trav.mm : 12.70...12.80
2nd speed 1/min : 500
C-rod trav.mm : 12.70...12.90
5th speed 1/min : 400
C-rod trav.mm : 13.70...14.30

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500
Del.quantity cm3/ : 115.0...118.0
1000H.: (112.5...120.5)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 135.0...149.0
1000H.: (132.0...152.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 400
Contr.-rod trav.mm: 5.90...6.10
Del.quantity cm3/ : 16.5...20.5
1000H.: (14.0...23.0)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:
APPLICATION
Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FOR 6,6 A 1
Edition : 6.87
Superceeded : 5.85
Calibrating oil : ISO-4113
Combination no. : 9 400 085 232
Injection pump
Pump designation : PES6A95D41ORS2688
EP type number : 9 400 083 090
Governor
Governor design. : RQV350...1300AB1208L
Governor no. : 9 420 080 185

Customer-spec. information
Customer : FORD

Engine : 6,6 L TC

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.15...3.25
 : (3.10...3.30)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5--3-6-2-4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.5 (0.75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 9.00...12.00
& c-rod trav max. : 21.00
Difference ° CS : 2.0...3.0

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 12.10...12.20

Del.quantity cm3/ : 8.6...8.8

100H.: (8.4...9.0)

Dispersion cm3/ : 0.35

100H.: (0.6)

2nd speed 1/min: 350
Contr.-rod trav. m: 6.90...7.10
Del.quantity cm3/ : 0.95...1.35
100H.: (0.7...1.6)
Dispersion cm3/ : 0.35
100H.: (0.55)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 1.30...1.50
2nd speed 1/min: 500
Sleeve travel mm: 3.50...3.70
3rd speed 1/min: 1000
Sleeve travel mm: 5.90...6.10
4th speed 1/min: 1345
Sleeve travel mm: 8.50...6.10

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1345
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1300
Charge press. hPa : 500
Del.quantity cm3/ : 86.0...90.0
1000H.: (84.0...90.0)

Dispersion cm³/ : 3.5
1000H.: (6.0)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 58...66

Testing:

1st c-rod trav.mm : 11.10

Speed 1/min : 1340...1350

2nd c-rod trav.mm : 4.00

Speed 1/min : 1460...1490

4th speed 1/min : 1600

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 14...22

Testing:

Speed 1/min : 100

C-rod trav.mm min : 10.00

Speed 1/min : 350

C-rod trav.mm : 6.90...7.10

C-rod trav.mm : 2.00

Speed 1/min : 670...730

TORQUE CONTROL

Dimension a mm : 0.70

Torque-control curve - 1st version

1st speed 1/min : 1300

C-rod trav.mm : 12.10...12.20

2nd speed 1/min : 600

C-rod trav.mm : 12.80...12.90

3rd speed 1/min : 800

C-rod trav.mm : 12.60...12.80

4th speed 1/min : 900

C-rod trav.mm : 12.40...12.70

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 500

Contr.-rod trav.mm: 12.80...12.90

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 10.60...10.70

2nd pressure hPa : 400

C-rod trav.mm : 12.20....12.30

3rd pressure hPa : 250

C-rod trav.mm : 11.00...11.20

SWITCH-OVER POINT

K23

Speed 1/min : 290(310)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 500

Speed 1/min : 600

Del.quantity cm³/ : 83.0...86.0

1000H.: (80.5...88.5)

Charge press. hPa : 500

Speed 1/min : 800

Del.quantity cm³/ : 86.0...89.0

1000H.: (83.5...91.5)

Charge press. hPa : -

Speed 1/min : 600

Del.quantity cm³/ : 57.0...59.0

1000H.: (55.0...61.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm³/ : 115.0...125.0

1000H.: (-)

Contr.-rod trav.mm: 20.00...21.00

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FOR 6,6 G
Edition : 6.87
Superceeded : 4.86
Calibrating oil : ISO-4113

Combination no. : 9 400 085 248

Injection pump
Pump designation : PES6A95D412RS2709
EP type number : 9 400 083 009
Governor
Governor design. : RQV350...1400AB1202-1L
Governor no. : 9 420 080 220

Customer-spec. information
Customer : FORD (FTO)

Engine : 6,6 L NA

1st version kW : 106.7
Speed 1/min: 2800

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values _____

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.15...3.25
: (3.10...3.30)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5-3-6-2-4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - ^o : 0.5(0.75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 9.00...12.00
& c-rod tray max. : 21.00
Difference ^o CS : 2.0...3.0

BASIC SETTING

1st speed 1/mi: 1400

Contr.-rod trav.mm: 10.70...10.80

Del.quantity cm3/ : 7.9...8.0

100H.: (7.7...8.2)

Dispersion cm3/ : 0.35

100H.: (0.6)

2nd speed 1/min: 350

Contr.-rod trav. m: 6.40...6.60

Del.quantity cm3/ : 0.7...1.1

100H.: (0.5...1.3)

Dispersion cm3/ : 0.35

100H.: (0.55)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 350

Sleeve travel mm: 1.30...1.60

2nd speed 1/min: 700

Sleeve travel mm: 4.20...4.60

3rd speed 1/min: 1100

Sleeve travel mm: 6.10...6.40

4th speed 1/min: 1420

Sleeve travel mm: 8.50...8.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1420

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1400

Del.quantity cm3/ : 79.0...80.0
1000H.: (77.0...82.0)
Dispersion cm3/ : 3.5
1000H.: (5.5)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 60...66

Testing:

1st c-rod trav.mm : 9.70

Speed 1/min : 1450...1460

2nd c-rod trav.mm : 4.00

Speed 1/min : 1550...1580

4th speed 1/min : 1720

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 10...18

Testing:

Speed 1/min : 100

C-rod trav.mm min : 9.00

Speed 1/min : 350

C-rod trav.mm : 6.40...6.60

C-rod trav.mm : 2.00

Speed 1/min : 560...620

SWITCH-OVER POINT

Speed 1/min : 290(310)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800

Del.quantity cm3/ : 70.0...73.0

1000H.: (67.5...75.5)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 112.0...122.0

1000H.: (-)

Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350

Contr.-rod trav.mm: 6.40...6.60

Del.quantity cm3/ : 7.0...11.0

1000H.: (5.0...13.0)

Dispersion cm3/ : 3.5

1000H.: (5.5)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FOR 6,6 F
Edition : 6.87
Superceeded : 3.86
Calibrating oil : ISO-4113
Combination no. : 9 400 085 258
Injection pump
Pump designation : PES6A95D410RS2714
EP type number : 9 400 084 001
Governor
Governor design. : RQV375...1300AB1208-1L
Governor no. : 9 420 080 219

Customer-spec. information
Customer : FORD (FTO)

Engine : 6,6 TC

1st version kW : 121.4
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6,00X2,00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.15...3.25
(3.10...3.30)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5-3-6-2-4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.5(0.75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 9.00...12.00
& c-rod tray max. : 21.00
Difference ° CS : 2.0...3.0

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 12.10...12.20

Del.quantity cm3/ : 8.6...8.8

100H.: (8.4...9.0)

Dispersion cm3/ : 0.35

100H.: (0.6)

2nd speed 1/min: 375

Contr.-rod trav. m: 6.70...6.90

Del.quantity cm3/ : 0.9...1.3

100H.: (0.7...1.6)

Dispersion cm3/ : 0.35

100H.: (0.55)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 350

Sleeve travel mm: 1.30...1.60

2nd speed 1/min: 700

Sleeve travel mm: 4.10...4.50

3rd speed 1/min: 1100

Sleeve travel mm: 6.30...6.60

4th speed 1/min: 1345

Sleeve travel mm: 8.50...8.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1345

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Charge press. hPa : 600
Del.quantity cm3/ : 86.0...88.0
1000H.: (84.0...90.0)
Dispersion cm3/ : 3.5
1000H.: (6.0)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 59...67

Testing:

1st c-rod trav.mm : 11.10
Speed 1/min : 1340...1350
2nd c-rod trav.mm : 4.00
Speed 1/min : 1450...1480
4th speed 1/min : 1600
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 12...20

Testing:

Speed 1/min : 100
C-rod trav.mm min : 10.00
Speed 1/min : 375
C-rod trav.mm : 6.70...6.90
C-rod trav.mm : 2.00
Speed 1/min : 650...710

TORQUE CONTROL

Dimension a mm : 0.70
Torque-control curve - 1st version
1st speed 1/min : 1300
C-rod trav.mm : 12.10...12.20
2nd speed 1/min : 600
C-rod trav.mm : 12.80...12.90
3rd speed 1/min : 800
C-rod trav.mm : 12.60...12.80
4th speed 1/min : 900
C-rod trav.mm : 12.40...12.70

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 600
Contr.-rod trav.mm: 12.80...12.90

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 10.60...10.70
2nd pressure hPa : 400
C-rod trav.mm : 12.20...12.30
3rd pressure hPa : 250

C-rod trav.mm : 11.00...11.20

SWITCH-OVER POINT

Speed 1/min : 290(310)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 600
Speed 1/min : 600
Del.quantity cm3/ : 83.0...86.0
1000H.: (80.5...88.5)
Charge press. hPa : 600
Speed 1/min : 800
Del.quantity cm3/ : 86.0...89.0
1000H.: (83.5...91.5)
Charge press. hPa : -
Speed 1/min : 600
Del.quantity cm3/ : 57.0...59.0
1000H.: (55.0...61.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 115.0...125.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FOR 6,6 A 2
Edition : 7.87
Superceeded : 2.86
Calibrating oil : ISO-4113
Combination no. : 9 400 085 262
Injection pump
Pump designation : PES6A95D41ORS2688
EP type number : 9 400 083 090
Governor
Governor design. : RQV375...1300AB1208-
1L
Governor no. : 9 420 080 219

Customer-spec. information
Customer : FORD (FT0)

Engine : 6,6 L TC

1st version kW : 121.4
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.15...3.25
: (3.10...3.30)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5-3-6-2-4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - ⁰ : 0.5(0.75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 9.00...12.00
& c-rod trav max. : 21.00
Difference ⁰ CS : 2.0...3.0

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 12.10...12.20

Del.quantity cm3/ : 8.6...8.8

100H.: (8.4...9.0)

Dispersion cm3/ : 0.35

100H.: (0.60)

2nd speed 1/min: 375

Contr.-rod trav. m: 6.70...6.90

Del.quantity cm3/ : 0.9...1.3

100H.: (0.7...1.6)

Dispersion cm3/ : 0.35

100H.: (0.55)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 350

Sleeve travel mm: 1.30...1.60

2nd speed 1/min: 700

Sleeve travel mm: 4.10...4.50

3rd speed 1/min: 1100

Sleeve travel mm: 6.30...6.60

4th speed 1/min: 1345

Sleeve travel mm: 8.50...8.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1345

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

L02

Charge press. hPa : 600
Del.quantity cm3/ : 86.0...88.0
1000H.: (84.0...90.0)
Dispersion cm3/ : 3.5
1000H.: (6.0)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 59...67

Testing:

1st c-rod trav.mm : 11.10

Speed 1/min : 1340...1350

2nd c-rod trav.mm : 4.00

Speed 1/min : 1450...1480

4th speed 1/min : 1600

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 12...20

Testing:

Speed 1/min : 100

C-rod trav.mm min : 10.00

Speed 1/min : 375

C-rod trav.mm : 6.70...6.90

C-rod trav.mm : 2.00

Speed 1/min : 650...710

TORQUE CONTROL

Dimension a mm : 0.70

Torque-control curve - 1st version

1st speed 1/min : 1300

C-rod trav.mm : 12.10...12.20

2nd speed 1/min : 600

C-rod trav.mm : 12.80...12.90

3rd speed 1/min : 800

C-rod trav.mm : 12.60...12.80

4th speed 1/min : 900

C-rod trav.mm : 12.40...12.70

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 600

Contr.-rod trav.mm: 12.80...12.90

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 10.60...10.70

2nd pressure hPa : 400

C-rod trav.mm : 12.20...12.30

3rd pressure hPa : 250

C-rod trav.mm : 11.00...11.20

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 600
Speed 1/min : 600
Del.quantity cm3/ : 83.0...86.0
1000H.: (80.5...88.5)
Charge press. hPa : 600
Speed 1/min : 800
Del.quantity cm3/ : 86.0...89.0
1000H.: (83.5...91.5)
Charge press. hPa : -
Speed 1/min : 600
Del.quantity cm3/ : 57.0...59.0
1000H.: (55.0...61.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 115.0...125.0
1000H.: (-)
Contr.-rod trav.mm: 20.0...21.0

LOW IDLE

Speed 1/min : 375
Contr.-rod trav.mm: 6.70...6.90
Del.quantity cm3/ : 9.5...13.5
1000H.: (7.0...16.0)
Dispersion cm3/ : 3.5
1000H.: (5.5)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 10,0 Q9
 Edition : 21.05.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 9 400 087 368
 Injection pump
 Pump designation : PE6P110A32ORS3108V
 EP type number : 0 411 816 737
 Governor
 Governor design. : RQV250...1100PA589-1
 Governor no. : 9 420 080 166

Customer-spec. information
 Customer : VOLVO

Engine : THD 101 FD

1st version kW : 210.0

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 681 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.70...13.80

Del.quantity cm3/ : 18.0...18.2

100H.: (17.7...18.5)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250

Contr.-rod trav. m: 5.4...5.6

Del.quantity cm3/ : 3.2...3.6

100H.: (2.9...3.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.20...1.30

2nd speed 1/min: 370

Sleeve travel mm: 2.60...3.00

3rd speed 1/min: 430

Sleeve travel mm: 3.50...3.90

4th speed 1/min: 1160

Sleeve travel mm: 8.10...8.30

5th speed 1/min: 1210

Sleeve travel mm: 9.40...9.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1175

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 1200

Del.quantity cm3/ : 180.0...182.0

1000H.: (177.0...185.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 61...69

Testing:

1st c-rod trav.mm : 12.70

Speed 1/min : 1140...1150

2nd c-rod trav.mm : 4.00

Speed 1/min : 1220...1250

3rd c-rod trav.mm : 4.00

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 7...15

Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.70

Speed 1/min : 250

C-rod trav.mm : 5.40...5.60

C-rod trav.mm : 2.00

Speed 1/min : 345...405

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 1200

Contr.-rod trav.mm: 13.70...13.80

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 9.80...9.90

2nd pressure hPa : 720

C-rod trav.mm : 12.80...12.90

3rd pressure hPa : 360

C-rod trav.mm : 10.90...11.00

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 700

Del.quantity cm3/ : 108.0...110.0

1000H.: (105.0...113.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 160.0...190.0

1000H.: (-)

Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 5.40...5.60
Del.quantity cm3/ : 32.0...36.0
1000H.: (29.5...38.5)
Dispersion cm3/ : 3.00
1000H.: (6.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 10,0010
 Edition : 21.05.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 9 400 087 369
 Injection pump
 Pump designation : PE6P110A32ORS3108Z
 EP type number : 0 411 816 728
 Governor
 Governor design. : RQV250...1100PAS89-1
 Governor no. : 9 420 080 166

Customer-spec. information
 Customer : VOLVO

Engine : THD 101 GB

1st version kW : 161.0
 Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Contr.-rod trav.mm: 9.00...12.00

L07

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

 Contr.-rod trav.mm: 10.50...10.60

 Del.quantity cm3/ : 12.0...12.3

 100H.: (11.8...12.6)

 Dispersion cm3/ : 0.4

 100H.: (0.7)

 2nd speed 1/min: 250.0
 Contr.-rod trav. m: 5.4...5.6
 Del.quantity cm3/ : 3.2...3.6
 100H.: (-)
 Dispersion cm3/ : 0.3
 100H.: (0.6)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250
 Sleeve travel mm: 1.20...1.30
 2nd speed 1/min: 370
 Sleeve travel mm: 2.60...3.00
 3rd speed 1/min: 430
 Sleeve travel mm: 3.50...3.90
 4th speed 1/min: 1160
 Sleeve travel mm: 8.10...8.30
 5th speed 1/min: 1210
 Sleeve travel mm: 9.40...9.60

SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed 1/min: 1175
 Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 700
 Charge press. hPa : 750
 Del.quantity cm3/ : 120.0...123.0
 1000H.: (118.0...126.0)
 Dispersion cm3/ : 4.00
 1000H.: (7.50)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 52...60

Testing:

1st c-rod trav.mm : 9.50

Speed 1/min : 1140...1150

2nd c-rod trav.mm : 4.00

Speed 1/min : 1205...1235

3rd c-rod trav.mm : 4.00

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 8...12

Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.90

Speed 1/min : 250

C-rod trav.mm : 5.40...5.60

C-rod trav.mm : 2.00

Speed 1/min : 350...410

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 750

Contr.-rod trav.mm: 10.50...10.60

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 9.60...9.80

2nd pressure hPa : 250

C-rod trav.mm : 10.30...10.40

3rd pressure hPa : 220

C-rod trav.mm : 10.00...10.20

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : -

Speed 1/min : 700

Del.quantity cm3/ : 104.5...107.5

1000H.: (102.0...110.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

L08

Del.quantity cm3/ : 160.0...190.0

1000H.: (-)

Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250

Contr.-rod trav.mm: 5.40...5.60

Del.quantity cm3/ : 32.0...36.0

1000H.: (-)

Dispersion cm3/ : 3.00

1000H.: (6.00)

Delivery-valve spring pre-tension =

2.40...2.60 mm.

Permissible alteration from 2.20...2.90

mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,0 V7
Edition : 6.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 9 400 087 370
Injection pump
Pump designation : PE6P120A720RS7004
EP type number : 0 412 626 801
Governor
Governor design. : RSV350...900P7/481
Governor no. : 9 420 082 320

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DS 11

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00X1,50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)

Contr.-rod trav.mm: 9.00...12.00

L09

Cam sequence : 1-5-3-6-2-4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.5 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 900

Contr.-rod trav.mm: 12.80...12.90

Del.quantity cm3/ : 20.8...21.0

100H.: (20.5...21.3)

Dispersion cm3/ : 0.6

100H.: (0.9)

2nd speed 1/min: 350

Contr.-rod trav. m: 5.40...5.60

Del.quantity cm3/ : 1.2...1.8

100H.: (0.9...2.1)

Dispersion cm3/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...1.40

Governor-spring reload

Notch setting x : 6.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 900

Del.quantity cm3/ : 208.0...210.0

1000H.: (205.0...213.0)

Dispersion cm3/ : 6.0

1000H.: (9.0)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 46...54

Testing:

1st c-rod trav.mm : 11.80

Speed 1/min : 920...925

2nd c-rod trav.mm : 4.00

Speed 1/min : 960...970

4th speed 1/min : 1050

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever

position degrees: 16...24

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 4.00

Speed 1/min : 350

C-rod trav.mm : 4.40...4.60

C-rod trav.mm : 2.00

Speed 1/min : 400...460

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity in 3/ : 240.0...290.0

1000H.: (-)

Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 350

Contr.-rod trav.mm: 4.40...4.60

Remarks:

Delivery-valve spring pre-tension

3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm

Because of flattening, set the spring

preload on new delivery-valve holders

to 3.0...3.1 mm.

Screw in torque-control-spring

retainer to make contact at 500 l/min.

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DEE 10.1 A7
Edition : 4.3.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 9 400 231 008

Injection pump
Pump designation : PES6P110A72ORS370
Governor
Governor design. : RSV500...900P0/452DR

Customer-spec. information
Customer : JOHN DEERE

Engine : 6619 T

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve
: 1 457 413 010

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Prestroke mm : 2.75...2.85
: (2.70...2.90)
Contr.-rod trav.mm: 11.60
Cam sequence : 1-5-3-6-2-4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 900

Contr.-rod trav.mm: 11.60

Del.quantity cm3/ : 16.0...16.2

100H.: (-)

Dispersion cm3/ : 0.4

100H.: (-)

2nd speed 1/min: 500
Contr.-rod trav. m: 6.00
Del.quantity cm3/ : 19.0...25.0
100H.: (-)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...0.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 900
Del.quantity cm3/ : 160.0...1141.0
1000H.: (157.0...165.0)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 38...46

Testing:
1st c-rod trav.mm : 10.60
Speed 1/min : 945...955
2nd c-rod trav.mm : 6.20
Speed 1/min : 985...1015
3rd c-rod trav.mm : 0.30...1.70
Speed 1/min : 1100

LOWEST RATED SPEED I

Control-lever
position degrees: 21...29

Testing:
Speed 1/min : 500
C-rod trav.mm min : 5.50
C-rod trav.mm : 2.00
Speed 1/min : 610...670

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 900
C-rod trav.mm : 11.60

2nd speed 1/min : 700
C-rod trav.mm : 12.10...12.30
3rd speed 1/min : 650
C-rod trav.mm : 12.45...12.55
4th speed 1/min : 500
C-rod trav.mm : 12.80

SWITCH-OVER POINT
Speed 1/min : 400...750

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 650
Del.quantity cm3/ : 176.5...179.5
1000H.: (173.5...182.5)
Speed 1/min : 550
Del.quantity cm3/ : 135.0...141.0
1000H.: (132.0...144.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 190.0...210.0
1000H.: (-)

HIGH IDLE

Speed 1/min : 1000
Del.quantity cm3/ : 47.0...57.0
1000H.: (-)

LOW IDLE

Speed 1/min : 500
Del.quantity cm3/ : 190.0...250.0
1000H.: (-)

Remarks:
: JOHN DEERE NO. AR
: 88764

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 9.4 A 6
Edition : 11.3.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 9 400 231 103

Injection pump
Pump designation : PES8P100A921/SRS286
Governor
Governor design. : RQV350...1300PA624K

Customer-spec. information
Customer : IHC

Engine : DVT 800

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 040

Inlet press., bar : 2.8

Calibrating nozzle-holder
assembly : 1 688 901 017

Opening
pressure, bar : 207

Test inj. tubing : 9 681 230 713

Outside diameter
x Wall thickness
x Length mm : 6.35x1.70x1001

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Prestroke mm : 2.75...2.95
: (2.70...3.00)
Contr.-rod trav.mm: 10.50
Cam sequence : 1-8-4-2-7-3-6-5

SD ang. spacing°CS: 0-45-90-135-180-225-

Tolerance + - ° : 270-315-
: 0.50(0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 11.20

Del.quantity cm3/ : 12.7...12.9

100H.: (-)

Dispersion cm3/ : 0.4

100H.: (-)

2nd speed 1/min: 350

Contr.-rod trav. m: 5.00

Del.quantity cm3/ : 1.9...2.3

100H.: (-)

Dispersion cm3/ : 0.5

100H.: (-)

SLEEVE POSITION

Control-lever position

Degree: 63...67

Speed 1/min: 1320

Cont.-rod travelmm: 15.00...17.50

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Charge press. hPa : 1200

Del.quantity cm3/ : 127.0...129.0

1000H.: (-)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 59...65

Testing:

1st c-rod trav.mm : 10.20

Speed 1/min : 1350...1360

2nd c-rod trav.mm : 4.00

Speed 1/min : 1450...1480

3rd c-rod trav.mm : 0...1.00

Speed 1/min : 1650

LOWEST RATED SPEED I

Control-lever

position degrees: 10...15

Testing:

Speed 1/min : 350

C-rod trav.mm min : 5.10

Speed 1/min : 100

C-rod trav.mm : 7.40...8.70

C-rod trav.mm : 2.00
Speed 1/min : 540...600
C-rod trav.mm : -
Speed 1/min : 400...470

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300
C-rod trav.mm : 11.20
2nd speed 1/min : 900
C-rod trav.mm : 10.80...10.90
3rd speed 1/min : 700
C-rod trav.mm : 10.20...10.30

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1200
Speed 1/min : 900
Del.quantity cm3/ : 119.0...125.0
1000H.: (-)
Charge press. hPa : -
Speed 1/min : 800
Del.quantity cm3/ : 83.0...91.0
1000H.: (-)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 200.0...240.0
1000H.: (-)

HIGH IDLE

1st version

Charge press. hPa : 1200
Speed 1/min : 1505
Contr.-rod trav.mm: 4.00

LOW IDLE

Speed 1/min : 350
Del.quantity cm3/ : 190.0...230.0
1000H.: (-)

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : S0F 2,5 G1
Edition : 06.07.87
replaces : -
Calibrating oil : ISO 4113
Injection pump : VE 3/10F1250 R129
Type number : 0 460 403 007

Customer-specific information
Customer : S0FIM - IVECO

Engine : 8135.61.200

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 000

Opening
pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : 0,2
(from BDC): +-0,02 (0,04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1250
Setting value mm: 3,1...3,5

Supply-pump pressure:

Speed 1/min: 1250
Setting value bar: 4,5...5,1

Full-load del. w/out charge press.:

Speed 1/min : 1250

Del.quantity cm3/
1000H.: 42,5...43,5
Dispersion cm3/: 3,0
1000H.: (3,5)

Low-idle speed regulation:

Speed 1/min: 400
Del.quantity cm3/
1000H.: 11,0...15,0
Dispersion cm3/: 2,5
1000H.: (3,0)

Full-load speed regulation:

Speed 1/min: 1450
Del.quantity cm3/
1000H.: 9,5...15,5

Start:

Speed 1/min: 100
Del.quantity : -
mind cm3/1000H.: 42,0

Load-dependent start of delivery:

Speed 1/min: 1250

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 800
TD travel mm: 0,7...1,5
mm: (0,4...1,8)
2nd speed 1/min: 1000
TD travel mm: 1,7...2,3
mm: (1,3...2,7)
3rd speed 1/min: 1250
TD travel mm: -
mm: (2,6...4,0)

Supply-pump pressure characteristic:

1st speed 1/min: 600
Supply-pump
pressure bar: 2,3...2,9
2nd speed 1/min: 1000
Supply-pump
pressure bar: 3,7...4,3

Overflow quantity at overflow valve:

1st speed 1/min: 600
Overflow : 55...138
quantity cm3/10s: (40...153)
2nd speed 1/min: 1250

Overflow : 55...138
quantity cm3/10s: (40...153)

Remarks:

Delivery-quant. and breakaway char.:

1st speed 1/min: 1500
Del.quantity cm3/: 0,0...2,5
1000H.: -
2nd speed 1/min: 1450
Del.quantity cm3/: -
1000H.: (8,5...16,5)
3rd speed 1/min: 1400
Del.quantity cm3/: 24,0...30,0
1000H.: (23,0...31,0)
4th speed 1/min: 1250
Del.quantity cm3/: -
1000H.: (40,8...45,2)
5th speed 1/min: 1000
Del.quantity cm3/: 39,0...41,0
1000H.: (37,8...42,2)
6th speed 1/min: 600
Del.quantity cm3/: 31,0...34,0
1000H.: (29,5...35,5)

Zero delivery (stop):

Mech. shutoff:

Speed 1/min: 1250
Del.quantity cm3/: -
1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 400
Del.quantity cm3/: -
1000H.: (9,0...17,0)
2nd speed 1/min: 450
Del.quantity cm3/: 3,0...9,0
1000H.: (2,0...10,0)
3rd speed 1/min: 500
Del.quantity cm3/: 0,0...2,5
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 350
Del.quantity cm3/: -
ind. 1000H: 42,0

2nd speed 1/min: 450
Del.quantity cm3/: -
ax. 1000H: 40,0

Mounting and assembly dimensions:

Designation

K mm : -
KF mm : 5,9...6,2
MS mm : 1,4...1,65
SVS max. mm : 2,6

L16

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAS 2,5 A
Edition : 16.07.87
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 3/10F1025 R276
Type number : 0 460 403 010

Customer-specific information
Customer : CASE

Engine : D 155/433

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 020

Opening
pressure bar : 172...175

Perforated-plate
diameter mm : 0.6

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 800
Setting value mm: 2,2...2,6

Supply-pump pressure:

Speed 1/min: 800
Setting value bar: 4,2...4,8

Full-load del. w/out charge press.:

Speed 1/min : 800

Del. quantity cm3/
1000H.: 60,0...61,0
Dispersion cm3/: 2,5
1000H.: (3,5)

Low-idle speed regulation:

Speed 1/min: 350
Del. quantity cm3/
1000H.: 13,0...17,0
Dispersion cm3/: 2,5
1000H.: (3,5)

Full-load speed regulation:

Speed 1/min: 1090
Del. quantity cm3/
1000H.: 37,0...43,0

Start:

Speed 1/min: 100
Del. quantity : -
mind cm3/1000H.: 75,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 600
TD travel mm: 0,7...1,5
mm: (0,4...1,8)
2nd speed 1/min: 800
TD travel mm: -
mm: (1,7...3,1)
3rd speed 1/min: 1000
TD travel mm: 3,5...4,3
mm: (3,2...4,6)

Supply-pump pressure characteristic:

1st speed 1/min: 500
Supply-pump pressure bar: 3,0...3,6
2nd speed 1/min: 1000
Supply-pump pressure bar: 5,0...5,6

Overflow quantity at overflow valve:

1st speed 1/min: 500
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 1000
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1200

Del. quantity cm3/: 0,0...3,0
1000H.: -

2nd speed 1/min: 1170

Del. quantity cm3/: 0,0...10,0
1000H.: -

3rd speed 1/min: 1120

Del. quantity cm3/: 10,0...40,0
1000H.: -

4th speed 1/min: 1090

Del. quantity cm3/: -
1000H.: (35,5...44,5)

5th speed 1/min: 1000

Del. quantity cm3/: 60,5...63,5
1000H.: (59,5...64,5)

6th speed 1/min: 800

Del. quantity cm3/: -
1000H.: (58,2...62,8)

7th speed 1/min: 500

Del. quantity cm3/: 56,0...60,0
1000H.: (55,0...61,0)

Zero delivery (stop):

Mech. shutoff:

Speed 1/min: 1000
Del. quantity cm3/: 0..3
1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 350
Del. quantity cm3/: -
1000H.: (11,0...15,0)
2nd speed 1/min: 450
Del. quantity cm3/: 0,0...4,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 350
Del. quantity cm3/: -
ind. 1000H.: 70,0

2nd speed 1/min: 450
Del. quantity cm3/: -
ax. 1000H.: 70,0

Shutoff electromagnet:

Cut-in

min. voltage : -
Rated voltage : -

Mounting and assembly dimensions:

Designation

K mm : 3,2...3,4
KF mm : 5,2...5,5
MS mm : 1,2...1,45

| | | |
|----------|----|---------------|
| SVS max. | mm | : 4,6 |
| XK | mm | : 20,2...22,2 |
| XL | mm | : 8.6...12,0 |

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAS 2,5 B
Edition : 16.07.87
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 3/10F1100 R276-1
Type number : 0 460 403 011

Customer-specific information
Customer : CASE

Engine : D 155/533/385

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 020

Opening
pressure bar : 172...175

Perforated-plate
diameter mm : 0.6

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 800
Setting value mm: 2,2...2,6

Supply-pump pressure:

Speed 1/min: 800
Setting value bar: 3,9...4,5

Full-load del. w/out charge press.:

Speed 1/min : 800

Del. quantity cm3/
1000H.: 66,0...67,0
Dispersion cm3/: 2,5
1000H.: (3,5)

Low-idle speed regulation:

Speed 1/min: 350
Del. quantity cm3/
1000H.: 13,0...17,0
Dispersion cm3/: 2,5
1000H.: (3,5)

Full-load speed regulation:

Speed 1/min: 1150
Del. quantity cm3/
1000H.: 67,2...70,2

Start:

Speed 1/min: 100
Del. quantity : -
mind cm3/1000H.: 75,0

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 600
TD travel mm: 0,8...1,6
mm: (0,5...1,9)
2nd speed 1/min: 800
TD travel mm: -
mm: (1,7...3,1)
3rd speed 1/min: 1050
TD travel mm: 3,6...4,4
mm: (3,3...4,7)

Supply-pump pressure characteristic:

1st speed 1/min: 500
Supply-pump pressure bar: 2,8...3,4
2nd speed 1/min: 1050
Supply-pump pressure bar: 4,9...5,5

Overflow quantity at overflow valve:

1st speed 1/min: 500
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 1050
Overfl : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1250

Del. quantity cm3/: 0,0...3,0
1000H.: -

2nd speed 1/min: 1230
Del. quantity cm3/: 0,0...10,0
1000H.: -

3rd speed 1/min: 1180
Del. quantity cm3/: 10,0...40,0
1000H.: -

4th speed 1/min: 1150
Del. quantity cm3/: -
1000H.: (45,5...54,5)

5th speed 1/min: 1050
Del. quantity cm3/: 67,2...71,2
1000H.: (66,2...71,2)

6th speed 1/min: 800
Del. quantity cm3/: -
1000H.: (64,2...68,8)

7th speed 1/min: 500
Del. quantity cm3/: 59,0...63,0
1000H.: (58,0...64,0)

Zero delivery (stop):

Mech. shutoff:
Speed 1/min: 1100
Del. quantity cm3/: -
1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 350
Del. quantity cm3/: -
1000H.: (11,0...15,0)
2nd speed 1/min: 450
Del. quantity cm3/: 0,0...4,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 350
Del. quantity cm3/: -
ind. 1000H.: 80,0

2nd speed 1/min: 450
Del. quantity cm3/: -
ax. 1000H.: 80,0

Shutoff electromagnet:

Cut-in
min. voltage : -
Rated voltage : -

Mounting and assembly dimensions:

Designation
K mm : 3,2...3,4
KF mm : 5,3...5,5
MS mm : 1,2...1,45

| | | | |
|----------|----|---|-------------|
| SVS max. | mm | : | 4,3 |
| xK | mm | : | 20,2...22,2 |
| xL | mm | : | 10,0...13,4 |

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAS 2,5 C
Edition : 16.07.87
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 3/10F1090 R276-2
Type number : 0 460 403 012

Customer-specific information
Customer : CASE

Engine : D 179/633

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 020

Opening
pressure bar : 172...175

Perforated-plate
diameter mm : 0.6

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 200
Setting value mm: 4,8...5,2

Supply-pump pressure:

Speed 1/min: 800
Setting value bar: 4,2...4,8

Full-load del. w/out charge press.:

Speed 1/min : 800

Del. quantity cm3/
1000H.: 73,3...74,3
Dispersion cm3/: 2,5
1000H.: (3,5)

Low-idle speed regulation:

Speed 1/min: 400
Del. quantity cm3/
1000H.: 18,0...22,0
Dispersion cm3/: 2,5
1000H.: (3,5)

Full-load speed regulation:

Speed 1/min: 1145
Del. quantity cm3/
1000H.: 45,0...51,0

Start:

Speed 1/min: 100
Del. quantity : -
mind cm3/1000H.: 60,0

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 500
TD travel mm: 2,4...3,2
mm: (2,1...3,5)
2nd speed 1/min: 800
TD travel mm: -
mm: (4,3...5,7)
3rd speed 1/min: 1050
TD travel mm: 6,1...6,9
mm: (5,8...7,2)

Supply-pump pressure characteristic:

1st speed 1/min: 500
Supply-pump pressure bar: 3,1...3,7
2nd speed 1/min: 1050
Supply-pump pressure bar: 5,1...5,7

Overflow quantity at overflow valve:

1st speed 1/min: 500
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 1050
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.: 1st speed 1/min: 1300

Del. quantity cm3/: 0,0...3,0
1000H.: -
2nd speed 1/min: 1225
Del. quantity cm3/: 0,0...10,0
1000H.: -
3rd speed 1/min: 1175
Del. quantity cm3/: 10,0...40,0
1000H.: -
4th speed 1/min: 1145
Del. quantity cm3/: -
1000H.: (43,5...52,5)
5th speed 1/min: 1050
Del. quantity cm3/: 76,5...79,5
1000H.: (75,5...80,5)
6th speed 1/min: 800
Del. quantity cm3/: -
1000H.: (71,5...76,1)
7th speed 1/min: 500
Del. quantity cm3/: 70,5...74,5
1000H.: (69,5...75,5)

Zero delivery (stop):

Mech. shutoff:
Speed 1/min: 1050
Del. quantity cm3/: -
1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 400
Del. quantity cm3/: -
1000H.: (16,0...24,0)
2nd speed 1/min: 550
Del. quantity cm3/: 0,0...4,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 350
Del. quantity cm3/: -
ind. 1000H.: 80,0
2nd speed 1/min: 450
Del. quantity cm3/: -
ax. 1000H.: 80,0

Shutoff electromagnet:

Cut-in
min. voltage : -
Rated voltage : -

Mounting and assembly dimensions:

Designation
K mm : 3,2...3,4
KF mm : 5,2...5,5
MS mm : 1,7...1,95

SVS max. mm : 2,1

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA 1,7 H1
Edition : 14.07.87
replaces : 18.12.86
Calibrating oil : ISO 4113

Injection pump : VE 4/10F2050 R192
Type number : O 460 404 040

Customer-specific information
Customer : IVECO-SOFIM

Engine : 8144.91.200

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 000

Opening
pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : 0,3
(from BDC): +0,02 (0,04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1500
Charge press. hPa: 800
Setting value mm: 6,6...7,0

Supply-pump pressure:

Speed 1/min: 1500
Charge press. hPa: 800
Setting value bar: 6,6...7,2

Full-load del. with charge press.:

Speed 1/min: 1500
Charge press. hPa: 800
Del. quantity cm3/
1000H.: 56,0...57,0
Dispersion cm3/ : 3,0
1000H.: (3,5)

Full-load del. w/out charge press.:

Speed 1/min : 600
Del. quantity cm3/
1000H.: 43,5...44,5

Low-idle speed regulation:

Speed 1/min: 400
Charge press. hPa: -
Del. quantity cm3/
1000H.: 9,0...13,0
Dispersion cm3/ : 3,0
1000H.: (3,5)

Full-load speed regulation:

Speed 1/min: 2250
Charge press. hPa: 800
Del. quantity cm3/
1000H.: 34,5...40,5

Start:

Speed 1/min: 100
Del. quantity : -
mind cm3/1000H.: 44,0

Load-dependent start of delivery:

Speed 1/min: 1500

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 600
Charge press. hPa: 800
TD travel mm: 2,1...2,9
mm: (1,8...3,2)
2nd speed 1/min: 1500
Charge press. hPa: 800
TD travel mm: -
mm: (6,3...7,3)
3rd speed 1/min: 2050
Charge press. hPa: 800
TD travel mm: 7,8...8,6
mm: (7,5...8,9)

Supply-pump pressure characteristic:

1st speed 1/min: 600
Charge press. hPa: 800
Supply-pump
pressure bar: 4,1...4,7
2nd speed 1/min: 2050
Charge press. hPa: 800
Supply-pump
pressure bar: 8,2...8,8

Overflow quantity at overflow valve:

1st speed 1/min: 600
Charge press. hPa: 800
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 2050
Charge press. hPa: 800
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 800
Charge-air pressure-setting
point hPa: 250
LDA stroke mm: 4,5
Del. quantity cm3/ : -
1000H.: (49,5...54,5)
2nd speed 1/min: 2400
Charge press. hPa: 800
Del. quantity cm3/ : 0,0...3,0
1000H.: -
3rd speed 1/min: 2350
Charge press. hPa: 800
Del. quantity cm3/ : 1,5...8,5
1000H.: (1,0...9,0)
4th speed 1/min: 2250
Charge press. hPa: 800
Del. quantity cm3/ : -
1000H.: (33,5...41,5)
5th speed 1/min: 2050
Charge press. hPa: 800
Del. quantity cm3/ : 48,5...51,5
1000H.: (47,8...52,2)
6th speed 1/min: 1500
Charge press. hPa: 800
Del. quantity cm3/ : -
1000H.: (54,5...58,5)
7th speed 1/min: 600
Charge press. hPa: -
Del. quantity cm3/ : -
1000H.: (41,5...46,5)

Zero delivery (stop):

Electr. shutoff:
Speed 1/min: 400
ELAB volt: -
Del. quantity cm3/ : 0,0...3,0
max. 1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 400
Del. quantity cm3/: -
1000H.: (7,0...15,0)
2nd speed 1/min: 450
Del. quantity cm3/: 1,5...6,5
1000H.: (0,0...8,0)

Automatic starting fuel delivery:

1st speed 1/min: 450
Del. quantity cm3/: -
ind. 1000H: 47,0
2nd speed 1/min: 500
Del. quantity cm3/: -
ax. 1000H: 42,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

| | | | |
|----------|----|---|-------------|
| K | mm | : | - |
| KF | mm | : | 5,7...6,0 |
| MS | mm | : | 1,2...1,4 |
| SVS max. | mm | : | 2,2 |
| XK | mm | : | 17,0...19,0 |
| XL | mm | : | 11,4...14,8 |

Remarks:

Correction at adjusting nut (46)

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VMA 2,2 F
Edition : 20.07.87
replaces : -
Calibrating oil : ISO 4113
Injection pump : VE 4/10F2100 L269
Type number : 0 460 404 050

Customer-specific information
Customer : MOTORI VM

Engine : HR 492.4HJ

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 000

Opening
pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1500
Charge press. hPa: 1000
Setting value mm: 4,3...4,7

Supply-pump pressure:

Speed 1/min: 1500
Charge press. hPa: 1000
Setting value bar: 5,9...6,5

Full-load del. with charge press.:

Speed 1/min: 1500
Charge press. hPa: 1000

Del.quantity cm3/
1000H.: 66,0...67,0
Dispersion cm3/ : 3,0
1000H : (3,5)

Full-load del. w/out charge press.:

Speed 1/min : 700
Del.quantity cm3/
1000H.: 53,0...54,0

Low-idle speed regulation:

Speed 1/min: 425
Charge press. hPa: -
Del.quantity cm3/
1000H.: 13,0...17,0
Dispersion cm3/ : 3,0
1000H.: (3,5)

Full-load speed regulation:

Speed 1/min: 2100
Charge press. hPa: 1000
Del.quantity cm3/
1000H: 57,7...60,7

Start:

Speed 1/min: 100
Charge press. hPa: -
Del.quantity : -
mind cm3/1000H.: 55,0

Load-dependent start of delivery:

Speed 1/min: 1500
Charge press. hPa: -

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1000
Charge press. hPa: 1000
TD travel mm: 1,3...2,1
mm: (1,0...2,4)
2nd speed 1/min: 1500
Charge press. hPa: 1000
TD travel mm: -
mm: (3,8...5,2)
3rd speed 1/min: 2100
Charge press. hPa: 1000
TD travel mm: 7,1...7,9
mm: (6,8...8,2)

Supply-pump pressure characteristic:

1st speed 1/min: 500

Charge press. hPa: 1000
Supply-pump
pressure bar: 3,1...3,7
2nd speed 1/min: 2100
Charge press. hPa: 1000
Supply-pump
pressure bar: 7,5...8,1

Overflow quantity at overflow valve:

1st speed 1/min: 500
Charge press. hPa: -
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 2100
Charge press. hPa: 1000
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 700
Charge-air pressure-setting
point hPa: 450
Del.quantity cm3/: 62,0...63,0
1000H.: (59,9...65,1)

2nd speed 1/min: 2450
Charge press. hPa: 1000
Del.quantity cm3/: 0,5...7,5
1000H.: (0,0...8,5)

3rd speed 1/min: 2300
Charge press. hPa: 1000
Del.quantity cm3/: 27,0...33,0
1000H.: (25,5...34,5)

4th speed 1/min: 2100
Charge press. hPa: 1000
Del.quantity cm3/: -
1000H.: (56,6...61,8)

5th speed 1/min: 1500
Charge press. hPa: 1000
Del.quantity cm3/: -
1000H.: (63,9...69,1)

6th speed 1/min: 700
Charge press. hPa: 1000
Del.quantity cm3/: 67,5...70,5
1000H.: (65,6...72,4)

7th speed 1/min: 700
Charge press. hPa: -
Del.quantity cm3/: -
1000H.: (50,9...56,1)

8th speed 1/min: 600
Charge press. hPa: -
Del.quantity cm3/: 52,5...54,5
1000H.: (50,1...56,9)

Zero delivery (stop):

Mech. shutoff:
Speed 1/min: 2100
Del.quantity cm3/: -
1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 425
Del.quantity cm3/: -
1000H.: (10,5...19,5)
2nd speed 1/min: 450
Del.quantity cm3/: 7,5...12,5
1000H.: (5,5...14,5)
3rd speed 1/min: 500
Del.quantity cm3/: 0,5...5,5
1000H.: (0,0...7,5)

Automatic starting fuel delivery:

1st speed 1/min: 400
Del.quantity cm3/: -
ind. 1000H: 55,0

2nd speed 1/min: 550
Del.quantity cm3/: -
ax. 1000H: 57,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation
K mm : 3,2...3,4
KF mm : 5,7...6,0
MS mm : 0,9...0,95
SVS max. mm : 4,6

Remarks:

Correction at adjusting nut (46)

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAS 3,9 A
Edition : 17.07.87
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 4/10F1150 R283
Type number : 0 460 404 052

Customer-specific information
Customer : CASE

Engine : D 239/745

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 020

Opening
pressure bar : 172...175

Perforated-plate
diameter mm : 0.6

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : 0,2
(from BDC): $\pm 0,02$ (0,04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 800
Setting value mm: 4,2...4,6

Supply-pump pressure:

Speed 1/min: 800
Setting value bar: 5,3...5,9

Full-load del. w/out charge press.:

Speed 1/min: 800
Del.quantity cm3/
1000H.: 75,0...76,0
Dispersion cm3/: 3,0
1000H.: (3,5)

Low-idle speed regulation:

Speed 1/min: 350
Del.quantity cm3/
1000H.: 18,0...22,0
Dispersion cm3/: 3,0
1000H.: (3,5)

Full-load speed regulation:

Speed 1/min: 1215
Del.quantity cm3/
1000H.: 42,0...48,0

Start:

Speed 1/min: 100
Del.quantity : -
mind cm3/1000H.: 80,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 500
TD travel mm: 1,7...2,5
mm: (1,4...2,8)
2nd speed 1/min: 800
TD travel mm: -
mm: (3,7...5,1)
3rd speed 1/min: 1100
TD travel mm: 6,2...7,0
mm: (5,9...7,3)

Supply-pump pressure characteristic:

1st speed 1/min: 500
Supply-pump
pressure bar: 4,1...4,7
2nd speed 1/min: 1100
Supply-pump
pressure bar: 6,3...6,9

Overflow quantity at overflow valve:

1st speed 1/min: 500
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 1100
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1350
Del. quantity cm3/: 0,0...3,0
1000H.: -
2nd speed 1/min: 1275
Del. quantity cm3/: 0,0...10,0
1000H.: -
3rd speed 1/min: 1225
Del. quantity cm3/: 10,0...46,0
1000H.: -
4th speed 1/min: 1215
Del. quantity cm3/: -
1000H.: (40,5...49,5)
5th speed 1/min: 1100
Del. quantity cm3/: 73,0...76,0
1000H.: (72,0...77,0)
6th speed 1/min: 800
Del. quantity cm3/: -
1000H.: (73,2...77,8)
7th speed 1/min: 500
Del. quantity cm3/: 69,0...73,0
1000H.: (68,0...74,0)

Zero delivery (stop):

Mech. shutoff:

Speed 1/min: 1100
Del. quantity cm3/: 0..3

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 350
Del. quantity cm3/: -
1000H.: (16,0..24,0)
2nd speed 1/min: 500
Del. quantity cm3/: 0,0...4,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 350
Del. quantity cm3/: -
ind. 1000H.: 80,0
2nd speed 1/min: 450
Del. quantity cm3/: -
ax. 1000H.: 80,0

Shutoff electromagnet:

Cut-in
min. voltage : -
Rated voltage : -

Mounting and assembly dimensions:

Designation

K mm : -

M04

| | | |
|----------|----|---------------|
| KF | mm | : 5,1...5,4 |
| MS | mm | : 1,3..1,55 |
| SVS max. | mm | : 3,6 |
| XK | mm | : 20,2...22,2 |
| XL | mm | : 9,3...12,7 |

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAS 3,9 B
Edition : 09.07.87
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 4/10F1150 R283
Type number : O 460 404 052
Customer Part-No. : 1329 125 C1

Customer-specific information
Customer : CASE

Engine : D 239/743

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 020

Opening
pressure bar : 172...175

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : 0,2
(from BDC): +-0,02

Indicator setting:
Piston stroke mm: 1.0
Outlet : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 800
Setting value mm: 4,2...4,6

Supply-pump pressure:

Speed 1/min: 800

Setting value bar: 5,3...5,9

Full-load del. w/out charge press.:

Speed 1/min: 800
Del. quantity cm3/
1000H.: 67,5...68,5
Dispersion cm3/: 3,0
1000H.: (3,5)

Low-idle speed regulation:

Speed 1/min: 350
Del. quantity cm3/
1000H.: 18,0...22,0
Dispersion cm3/: 3,0
1000H.: (3,5)

Full-load speed regulation:

Speed 1/min: 1190
Del. quantity cm3/
1000H.: 42,0...48,0

Start:

Speed 1/min: 100
Del. quantity : -
mind cm3/1000H.: 80,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 500
TD travel mm: 1,7...2,5
mm: (1,4...2,8)
2nd speed 1/min: 800
TD travel mm: -
mm: (3,7...5,1)
3rd speed 1/min: 1100
TD travel mm: 6,2...7,0
mm: (5,9...7,3)

Supply-pump pressure characteristic:

1st speed 1/min: 500
Supply-pump pressure bar: 4,1...4,7
2nd speed 1/min: 1100
Supply-pump pressure bar: 6,3...6,9

Overflow quantity at overflow valve:

1st speed 1/min: 500
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 1100

M06

Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1300
Del. quantity cm3/: 0,0...3,0
1000H.: -
2nd speed 1/min: 1260
Del. quantity cm3/: 0,0...10,0
1000H.: -
3rd speed 1/min: 1210
Del. quantity cm3/: 0,0...10,0
1000H.: -
4th speed 1/min: 1190
Del. quantity cm3/: -
1000H.: (40,5...49,5)
5th speed 1/min: 1100
Del. quantity cm3/: 63,8...66,8
1000H.: (62,6...68,0)
6th speed 1/min: 800
Del. quantity cm3/: -
1000H.: (65,3...70,7)
7th speed 1/min: 500
Del. quantity cm3/: 58,5...62,5
1000H.: (57,1...63,9)

Zero delivery (stop):

Mech. shutoff:
Speed 1/min: 1100
Del. quantity cm3/: -
1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 350
Del. quantity cm3/: -
1000H.: (15,5...24,5)
2nd speed 1/min: 500
Del. quantity cm3/: 0,0...4,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 350
Del. quantity cm3/: -
ind. 1000H.: 80,0
2nd speed 1/min: 450
Del. quantity cm3/: -
ax. 1000H.: 80,0

Shutoff electromagnet:

Cut-in
min. voltage : -
Rated voltage : -

Mounting and assembly dimensions:

Designation

| | | | |
|----------|----|---|-------------|
| K | mm | : | - |
| KF | mm | : | 5,1...5,4 |
| MS | mm | : | 1,3...1,55 |
| SVS max. | mm | : | 3,6 |
| XK | mm | : | 20,2...22,2 |
| XL | mm | : | 9,3...12,7 |

Remarks:

B...-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAS 3,9 C
Edition : 09.07.87
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 4/10F1150 R283
Type number : O 460 404 052
Customer Part-No. : 1329 126 C1

Customer-specific information
Customer : CASE

Engine : D 239/644

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 020

Opening
pressure bar : 172...175

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : 0,2
(from BDC): +-0,02 (0,04)

Indicator setting:
Piston stroke mm: 1.0
Outlet : A

Start of delivery block
Piston stroke mm: -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 800
Setting value mm: 4,2...4,6

Supply-pump pressure:

Speed 1/min: 800
Setting value bar: 5,3...5,9

Full-load del. w/out charge press.:

Speed 1/min : 800
Del.quantity cm3/
1000H.: 70,0...71,0
Dispersion cm3/: 3,0
1000H.: (3,5)

Low-idle speed regulation:

Speed 1/min: 350
Del.quantity cm3/
1000H.: 18,0...22,0
Dispersion cm3/: 3,0
1000H.: (3,5)

Full-load speed regulation:

Speed 1/min: 1100
Del.quantity cm3/
1000H.: 42,0...48,0

Start:

Speed 1/min: 100
Del.quantity : -
mind cm3/1000H.: 80,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 500
TD travel mm: 1,7...2,5
mm: (1,4...2,8)
2nd speed 1/min: 800
TD travel mm: -
mm: (3,7...5,1)
3rd speed 1/min: 1000
TD travel mm: 5,4...6,2
mm: (5,1...6,5)

Supply-pump pressure characteristic:

1st speed 1/min: 500
Supply-pump
pressure bar: 4,1...4,7
2nd speed 1/min: 1000
Supply-pump
pressure bar: 5,9...6,5

Overflow quantity at overflow valve:

1st speed 1/min: 500

M09

Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 1050
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1200
Del.quantity cm3/: 0,0...3,0
1000H.: -
2nd speed 1/min: 1180
Del.quantity cm3/: 0,0...10,0
1000H.: -
3rd speed 1/min: 1130
Del.quantity cm3/: 0,0...10,0
1000H.: -
4th speed 1/min: 1100
Del.quantity cm3/: -
1000H.: (40,5...49,5)
5th speed 1/min: 1000
Del.quantity cm3/: 69,5...72,5
1000H.: (68,3...73,7)
6th speed 1/min: 800
Del.quantity cm3/: -
1000H.: (67,8...73,2)
7th speed 1/min: 500
Del.quantity cm3/: 62,5...66,5
1000H.: (61,1...67,9)

Zero delivery (stop):

Mech. shutoff:
Speed 1/min: 1000
Del.quantity cm3/: -
1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 350
Del.quantity cm3/: -
1000H.: (15,5...24,5)
2nd speed 1/min: 500
Del.quantity cm3/: 0,0...4,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 350
Del.quantity cm3/: -
ind. 1000H.: 80,0
2nd speed 1/min: 450
Del.quantity cm3/: -
ax. 1000H.: 80,0

Shutoff electromagnet:

Cut-in
min. voltage : -

Rated voltage : -

Mounting and assembly dimensions:

Designation

| | | | |
|----------|----|---|-------------|
| K | mm | : | - |
| KF | mm | : | 5,1...5,4 |
| MS | mm | : | 1,3...1,55 |
| SVS max. | mm | : | 3,6 |
| XK | mm | : | 20,2...22,2 |
| XL | mm | : | 9,3...12,7 |

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAS 3,9 D
Edition : 09.07.87
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 4/10F1150 R283
Type number : O 460 404 052
Customer Part-No. : 1329 127 C1

Customer-specific information
Customer : CASE

Engine : D 239/F-684 WT

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 020

Opening
pressure bar : 172...175

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : 0,2
(from BDC) : +0,02 (0,04)

Indicator setting:
Piston stroke mm: 1.0
Outlet : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 800
Setting value mm: 4,2...4,6

Supply-pump pressure:

Speed 1/min: 800

Setting value bar: 5,3...5,9

Full-load del. w/out charge press.:

Speed 1/min: 800
Del.quantity cm3/
1000H.: 70,0...71,0
Dispersion cm3/: 3,0
1000H.: (3,5)

Low-idle speed regulation:

Speed 1/min: 350
Del.quantity cm3/
1000H.: 18,0...22,0
Dispersion cm3/: 3,0
1000H.: (3,5)

Full-load speed regulation:

Speed 1/min: 1210
Del.quantity cm3/
1000H.: 41,5...47,5

Start:

Speed 1/min: 100
Del.quantity : -
mind cm3/1000H.: 80,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 500
TD travel mm: 1,7...2,5
mm: (1,4...2,8)
2nd speed 1/min: 800
TD travel mm: -
mm: (3,7...5,1)
3rd speed 1/min: 1150
TD travel mm: 6,6...7,4
mm: (6,3...7,7)

Supply-pump pressure characteristic:

1st speed 1/min: 500
Supply-pump pressure bar: 4,1...4,7
2nd speed 1/min: 1150
Supply-pump pressure bar: 6,5...7,1

Overflow quantity at overflow valve:

1st speed 1/min: 500
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 1150

Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1350
Del.quantity cm3/: 0,0...3,0
1000H.: -
2nd speed 1/min: 1270
Del.quantity cm3/: 0,0...10,0
1000H.: -
3rd speed 1/min: 1220
Del.quantity cm3/: 0,0...10,0
1000H.: -
4th speed 1/min: 1210
Del.quantity cm3/: -
1000H.: (40,0...49,0)
5th speed 1/min: 1150
Del.quantity cm3/: 65,2...68,2
1000H.: (64,0...69,4)
6th speed 1/min: 800
Del.quantity cm3/: -
1000H.: (67,8...73,2)
7th speed 1/min: 500
Del.quantity cm3/: 61,2...65,2
1000H.: (59,8...66,6)

Zero delivery (stop):

Mech. shutoff:
Speed 1/min: 1150
Del.quantity cm3/: -
1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 350
Del.quantity cm3/: -
1000H.: (15,5...24,5)
2nd speed 1/min: 500
Del.quantity cm3/: 0,0...4,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 350
Del.quantity cm3/: -
ind, 1000H.: 80,0
2nd speed 1/min: 450
Del.quantity cm3/: -
ax. 1000H.: 80,0

Shutoff electromagnet:

Cut-in
min. voltage : -
Rated voltage : -

Mounting and assembly dimensions:

Designation

| | | | |
|----------|----|---|-------------|
| K | mm | : | - |
| KF | mm | : | 5,1...5,4 |
| MS | mm | : | 1,3...1,55 |
| SVS max. | mm | : | 3,6 |
| XK | mm | : | 20,2...22,2 |
| XL | mm | : | 9,3...12,7 |

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAS 3,9 E
Edition : 09.07.87
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 4/10F1150 R283
Type number : 0 460 404 052
Customer Part-No. : 1329 128 C1

Customer-specific information
Customer : CASE

Engine : D 239/684

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 020

Opening
pressure bar : 172...175

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : 0,2
(from BDC): +-0,02 (0,04)

Indicator setting:
Piston stroke mm: 1.0
Outlet : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 800
Setting value mm: 4,2...4,6

Supply-pump pressure:

Speed 1/min: 800

Setting value bar: 5,3...5,9

Full-load del. w/out charge press.:

Speed 1/min: 800
Del.quantity cm3/
1000H.: 73,5...74,5
Dispersion cm3/: 3,0
1000H.: (3,5)

Low-idle speed regulation:

Speed 1/min: 350
Del.quantity cm3/
1000H.: 18,0...22,0
Dispersion cm3/: 3,0
1000H.: (3,5)

Full-load speed regulation:

Speed 1/min: 1250
Del.quantity cm3/
1000H.: 43,0...49,0

Start:

Speed 1/min: 100
Del.quantity : -
mind cm3/1000H.: 80,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 500
TD travel mm: 1,7...2,5
mm: (1,4...2,8)
2nd speed 1/min: 800
TD travel mm: -
mm: (3,7...5,1)
3rd speed 1/min: 1150
TD travel mm: 6,6...7,4
mm: (6,3...7,7)

Supply-pump pressure characteristic:

1st speed 1/min: 500
Supply-pump pressure bar: 4,1...4,7
2nd speed 1/min: 1150
Supply-pump pressure bar: 6,6...7,4

Overflow quantity at overflow valve:

1st speed 1/min: 500
Overflow quantity cm3/10s: 41...83
2nd speed 1/min: 1150

Overflow quantity cm3/10s: 55...138
(40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1400
Del.quantity cm3/: 0,0...3,0
1000H.: -
2nd speed 1/min: 1310
Del.quantity cm3/: 0,0...10,0
1000H.: -
3rd speed 1/min: 1260
Del.quantity cm3/: 0,0...10,0
1000H.: -
4th speed 1/min: 1250
Del.quantity cm3/: -
1000H.: (41,5...50,5)
5th speed 1/min: 1150
Del.quantity cm3/: 70,0...73,0
1000H.: (68,8...74,2)
6th speed 1/min: 800
Del.quantity cm3/: -
1000H.: (71,3...76,7)
7th speed 1/min: 500
Del.quantity cm3/: 66,7...70,7
1000H.: (65,3...72,1)

Zero delivery (stop):

Mech. shutoff:
Speed 1/min: 1150
Del.quantity cm3/: -
1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 350
Del.quantity cm3/: -
1000H.: (15,5...24,5)
2nd speed 1/min: 500
Del.quantity cm3/: 0,0...4,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 350
Del.quantity cm3/: -
ind. 1000H.: 80,0
2nd speed 1/min: 450
Del.quantity cm3/: -
ax. 1000H.: 80,0

Shutoff electromagnet:

Cut-in
min. voltage : -
Rated voltage : -

Mounting and assembly dimensions:

Designation

| | | | |
|----------|----|---|-------------|
| K | mm | : | - |
| KF | mm | : | 5,1...5,4 |
| MS | mm | : | 1,3..1,55 |
| SVS max. | mm | : | 3,6 |
| XK | mm | : | 20,2...22,2 |
| XL | mm | : | 9,3...12,7 |

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAS 3,9 F
Edition : 09.07.87
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 4/10F1150 R283
Type number : 0 460 404 052
Customer Part-No. : 1329 136 C1

Customer-specific information
Customer : CASE

Engine : D 206/733 WT

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 020

Opening
pressure bar : 172...175

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : 0,2
(from BDC) : +-0,02 (0,04)

Indicator setting:
Piston stroke mm: 1.0
Outlet : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 800
Setting value mm: 4,2...4,6

Supply-pump pressure:

Speed 1/min: 800

Setting value bar: 5,3...5,9

Full-load del. w/out charge press.:

Speed 1/min: 800
Del. quantity cm3/
1000H.: 70,8...71,8
Dispersion cm3/: 3,0
1000H.: (3,5)

Low-idle speed regulation:

Speed 1/min: 350
Del. quantity cm3/
1000H.: 18,0...22,0
Dispersion cm3/: 3,0
1000H.: (3,5)

Full-load speed regulation:

Speed 1/min: 1130
Del. quantity cm3/
1000H.: 35,5...41,5

Start:

Speed 1/min: 100
Del. quantity : -
mind cm3/1000H.: 80,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 500
TD travel mm: 1,7...2,5
mm: (1,4...2,8)
2nd speed 1/min: 800
TD travel mm: -
mm: (3,7...5,1)
3rd speed 1/min: 1050
TD travel mm: 5,8...6,6
mm: (5,5...6,9)

Supply-pump pressure characteristic:

1st speed 1/min: 500
Supply-pump pressure bar: 4,1...4,7
2nd speed 1/min: 1050
Supply-pump pressure bar: 6,1...6,7

Overflow quantity at overflow valve:

1st speed 1/min: 500
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 1050

Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1250
Del. quantity cm3/: 0,0...3,0
1000H.: -
2nd speed 1/min: 1200
Del. quantity cm3/: 0,0...10,0
1000H.: -
3rd speed 1/min: 1150
Del. quantity cm3/: 0,0...10,0
1000H.: -
4th speed 1/min: 1130
Del. quantity cm3/: -
1000H.: (34,0...43,0)
5th speed 1/min: 1050
Del. quantity cm3/: 69,8...71,8
1000H.: (67,6...73,0)
6th speed 1/min: 800
Del. quantity cm3/: -
1000H.: (68,6...74,0)
7th speed 1/min: 500
Del. quantity cm3/: 62,9...66,9
1000H.: (61,5...68,3)

Zero delivery (stop):

Mech. shutoff:
Speed 1/min: 1050
Del. quantity cm3/: -
1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 350
Del. quantity cm3/: -
1000H.: (15,5...24,5)
2nd speed 1/min: 500
Del. quantity cm3/: 0,0...4,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 350
Del. quantity cm3/: -
ind. 1000H.: 80,0
2nd speed 1/min: 450
Del. quantity cm3/: -
ax. 1000H.: 80,0

Shutoff electromagnet:

Cut-in
min. voltage : -
Rated voltage : -

Mounting and assembly dimensions:

Designation

| | | | |
|----------|----|---|-------------|
| K | mm | : | - |
| KF | mm | : | 5,1...5,4 |
| MS | mm | : | 1,3...1,55 |
| SVS max. | mm | : | 3,6 |
| XK | mm | : | 20,2...22,2 |
| XL | mm | : | 9,3...12,7 |

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAS 3,9 G
Edition : 09.07.87
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 4/10F1150 R283
Type number : O 460 404 052
Customer Part-No. : 1329 137 C1

Customer-specific information
Customer : CASE

Engine : D 206/584/585

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 020

Opening
pressure bar : 172...175

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : 0,2
(from BDC) : +-0,02 (0,04)

Indicator setting:
Piston stroke mm : 1.0
Outlet : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 800
Setting value mm: 4,2...4,6

Supply-pump pressure:

Speed 1/min: 800

Setting value bar: 5,3...5,9

Full-load del. w/out charge press.:

Speed 1/min: 800
Del. quantity cm3/
1000H.: 66,8...67,8
Dispersion cm3/: 3,0
1000H.: (3,5)

Low-idle speed regulation:

Speed 1/min: 350
Del. quantity cm3/
1000H.: 18,0...22,0
Dispersion cm3/: 3,0
1000H.: (3,5)

Full-load speed regulation:

Speed 1/min: 1230
Del. quantity cm3/
1000H.: 37,0...43,0

Start:

Speed 1/min: 100
Del. quantity : -
mind cm3/1000H.: 80,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 500
TD travel mm: 1,7...2,5
mm: (1,4...2,8)
2nd speed 1/min: 800
TD travel mm: -
mm: (3,7...5,1)
3rd speed 1/min: 1150
TD travel mm: 6,6...7,4
mm: (6,3...7,7)

Supply-pump pressure characteristic:

1st speed 1/min: 500
Supply-pump pressure bar: 4,1...4,7
2nd speed 1/min: 1150
Supply-pump pressure bar: 6,5...7,1

Overflow quantity at overflow valve:

1st speed 1/min: 500
Overflow quantity cm3/10s: 41...83
(26...98)
2nd speed 1/min: 1150

Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1350
Del. quantity cm3/: 0,0...3,0
1000H.: -
2nd speed 1/min: 1290
Del. quantity cm3/: 0,0...10,0
1000H.: -
3rd speed 1/min: 1240
Del. quantity cm3/: 0,0...10,0
1000H.: -
4th speed 1/min: 1230
Del. quantity cm3/: -
1000H.: (35,5...44,5)
5th speed 1/min: 1150
Del. quantity cm3/: 61,6...64,6
1000H.: (60,4...65,8)
6th speed 1/min: 800
Del. quantity cm3/: -
1000H.: (64,6...70,0)
7th speed 1/min: 500
Del. quantity cm3/: 56,7...60,7
1000H.: (55,3...62,1)

Zero delivery (stop):

Mech. shutoff:

Speed 1/min: 1150
Del. quantity cm3/: -
1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 350
Del. quantity cm3/: -
1000H.: (15,5...24,5)
2nd speed 1/min: 500
Del. quantity cm3/: 0,0...4,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 350
Del. quantity cm3/: -
ind. 1000H.: 80,0
2nd speed 1/min: 450
Del. quantity cm3/: -
ax. 1000H.: 80,0

Shutoff electromagnet:

Cut-in
min. voltage : -
Rated voltage : -

Mounting and assembly dimensions:

Designation

| | | | |
|----------|----|---|-------------|
| K | mm | : | - |
| KF | mm | : | 5,1...5,4 |
| MS | mm | : | 1,3...1,55 |
| SVS max. | mm | : | 3,6 |
| XK | mm | : | 20,2...22,2 |
| XL | mm | : | 9,3...12,7 |

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VWV 2,0 13
Edition : 07.07.87
replaces : 09.85
Calibrating oil : ISO 4113

Injection pump : VE 5/10F2400 L137
Type number : 0 460 405 030

Customer-specific information
Customer : VW

Engine : 153 (SG)

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 000

Opening
pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : 0,14
(from BDC): +-0,02 (0,04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1400
Setting value mm: 2,4...2,8

Supply-pump pressure:

Speed 1/min: 1400
Setting value bar: 5,0...5,6

Full-load del. w/out charge press.:

Speed 1/min : 1400

Del. quantity cm3/
1000H.: 32,5...33,5
Dispersion cm3/: 2,5
1000H.: (3,0)

Low-idle speed regulation:

Speed 1/min: 375
Del. quantity cm3/
1000H.: 6,0...10,0
Dispersion cm3/: 2,0
1000H.: (3,0)

Full-load speed regulation:

Speed 1/min: 2650
Del. quantity cm3/
1000H.: 7,0...11,0

Start:

Speed 1/min: 100
Del. quantity : -
mind cm3/1000H.: 50,0

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1000
TD travel mm: 1,3...2,1
mm: (0,9...2,5)
2nd speed 1/min: 1400
TD travel mm: -
mm: (1,8...3,4)
3rd speed 1/min: 2400
TD travel mm: 5,1...5,9
mm: (4,7...6,3)

Supply-pump pressure characteristic:

1st speed 1/min: 750
Supply-pump pressure bar: 3,4...4,0
2nd speed 1/min: 2400
Supply-pump pressure bar: 7,3...7,9

Overflow quantity at overflow valve:

1st speed 1/min: 750
2nd speed 1/min: 2400

Delivery-quant. and breakaway char.:

1st speed 1/min: 2750
Del. quantity cm3/: 0,0...6,0
1000H.: -
2nd speed 1/min: 2650

Del. quantity cm3/: -
1000H.: (5,0...13,0)
3rd speed 1/min: 2550
Del. quantity cm3/: 14,5...24,5
1000H.: (13,5...25,5)
4th speed 1/min: 2400
Del. quantity cm3/: 28,0...30,0
1000H.: (26,8...31,2)
5th speed 1/min: 1400
Del. quantity cm3/: -
1000H.: (30,8...35,2)
6th speed 1/min: 750
Del. quantity cm3/: 23,3...26,3
1000H.: (21,8...27,8)

Zero delivery (stop):

Electr. shutoff:

Speed 1/min: 375
ELAB volt: -
Del. quantity cm3/: 0,0...3,0
max. 1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 375
Del. quantity cm3/: -
1000H.: (4,0...12,0)
2nd speed 1/min: 450
Del. quantity cm3/: 0,0...3,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 400
Del. quantity cm3/: -
ind. 1000H: 15,5
2nd speed 1/min: 500
Del. quantity cm3/: -
ax. 1000H: 23,5

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K mm : -
KF mm : 5,7...6,0
MS mm : 1,7...1,9
SVS max. mm : 2,8

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VWV 2,0 I2
Edition : 07.07.87
replaces : 09.85
Calibrating oil : ISO 4113

Injection pump : VE 5/10F2400 L137-1
Type number : 0 460 405 032

Customer-specific information
Customer : VW

Engine : 153 (SG)

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 000

Opening
pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : 0,14
(from BDC) : +0,02 (0,04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1400
Setting value mm: 2,4...2,8

Supply-pump pressure:

Speed 1/min: 1400
Setting value bar: 5,0...5,6

Full-load del. w/out charge press.:

Speed 1/min : 1400

Del.quantity cm3/
1000H.: 32,5...33,5
Dispersion cm3/: 2,5
1000H.: (3,0)

Low-idle speed regulation:

Speed 1/min: 375
Del.quantity cm3/
1000H.: 6,0...10,0
Dispersion cm3/: 2,0
1000H.: (3,0)

Full-load speed regulation:

Speed 1/min: 2650
Del.quantity cm3/
1000H.: 7,0...11,0

Start:

Speed 1/min: 100
Del.quantity : -
mind cm3/1000H.: 50,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1000
TD travel mm: 1,3...2,1
mm: (0,9...2,5)
2nd speed 1/min: 1400
TD travel mm: -
mm: (1,8...3,4)
3rd speed 1/min: 2400
TD travel mm: 5,1...5,9
mm: (4,7...6,3)

Supply-pump pressure characteristic:

1st speed 1/min: 750
Supply-pump
pressure bar: 3,4...4,0
2nd speed 1/min: 2400
Supply-pump
pressure bar: 7,3...7,9

Overflow quantity at overflow valve:

1st speed 1/min: 750
2nd speed 1/min: 2400

Delivery-quant. and breakaway char.:

1st speed 1/min: 2750
Del.quantity cm3/: 0,0...6,0
1000H.: -
2nd speed 1/min: 2650

Del. quantity cm3/: -
1000H.: (5,0...13,0)
3rd speed 1/min: 2550
Del. quantity cm3/: 14,5...24,5
1000H.: (13,5...25,5)
4th speed 1/min: 2400
Del. quantity cm3/: 28,0...30,0
1000H.: (26,8...31,2)
5th speed 1/min: 1400
Del. quantity cm3/: -
1000H.: (30,8...35,2)
6th speed 1/min: 750
Del. quantity cm3/: 23,3...26,3
1000H.: (21,8...27,8)

Zero delivery (stop):

Electr. shutoff:

Speed 1/min: 375
ELAB volt: -
Del. quantity cm3/: 0,0...3,0
max. 1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 375
Del. quantity cm3/: -
1000H.: (4,0...12,0)
2nd speed 1/min: 450
Del. quantity cm3/: 0,0...3,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 400
Del. quantity cm3/: -
ind. 1000H: 15,5
2nd speed 1/min: 500
Del. quantity cm3/: -
ax. 1000H: 23,5

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K mm : -
KF mm : 5,7...6,0
MS mm : 1,7...1,9
SVS max. mm : 2,8

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VWV 2,3 B1
Edition : 20.07.87
replaces : 04.86
Calibrating oil : ISO 4113

Injection pump : VE 6/10F2400 L32
Type number : 0 460 406 003

Customer-specific information
Customer : VW

Engine : 087

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 000

Opening
pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 340

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1500
Setting value mm: 2,8...3,2

Supply-pump pressure:

Speed 1/min: 1500
Setting value bar: 5,2...5,8

Full-load del. w/out charge press.:

Speed 1/min : 1500
Del. quantity cm3/
1000H.: 28,5...29,5
Dispersion cm3/: 2,5
1000H.: (3,0)

Low-idle speed regulation:

Speed 1/min: 375
Del. quantity cm3/
1000H.: 6,0...10,0
Dispersion cm3/: 2,0
1000H.: (3,0)

Full-load speed regulation:

Speed 1/min: 2700
Del. quantity cm3/
1000H.: 7,0...11,0

Start:

Speed 1/min: 100
Del. quantity : -
mind cm3/1000H.: 35,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 800
TD travel mm: 5,7...6,5
(5,4...6,8)
2nd speed 1/min: 1000
TD travel mm: 0,8...1,6
(0,5...1,9)
3rd speed 1/min: 1500
TD travel mm: -
(2,3...3,7)
4th speed 1/min: 2400
TD travel mm: 5,7...6,5
(5,4...6,8)

Supply-pump pressure characteristic:

1st speed 1/min: 750
Supply-pump
pressure bar: 3,2...3,8
2nd speed 1/min: 2400
Supply-pump
pressure bar: 7,5...8,1

Overflow quantity at overflow valve:

1st speed 1/min: 750
Overflow : 41...88
quantity cm3/10s: (26...98)
2nd speed 1/min: 2400
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:
1st speed 1/min: 2800

Del. quantity cm³/: 0,0...6,0
1000H.: -
2nd speed 1/min: 2700
Del. quantity cm³/: -
1000H.: (5,0...13,0)
3rd speed 1/min: 2625
Del. quantity cm³/: 14,5...24,5
1000H.: (13,5...25,5)
4th speed 1/min: 2400
Del. quantity cm³/: 23,0...25,0
1000H.: (21,8...26,2)
5th speed 1/min: 1500
Del. quantity cm³/: -
1000H.: (26,8...31,2)
6th speed 1/min: 750
Del. quantity cm³/: 26,0...29,0
1000H.: (24,5...30,5)

Zero delivery (stop):

Electr. shutoff:
Speed 1/min: 375
ELAB volt: -
Del. quantity cm³/: 0,0...3,0
max. 1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 375
Del. quantity cm³/: -
1000H.: (4,0...12,0)
2nd speed 1/min: 600
Del. quantity cm³/: 0,0...4,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 400
Del. quantity cm³/: -
ind. 1000H.: 20,0
2nd speed 1/min: 500
Del. quantity cm³/: -
ax. 1000H.: 25,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation
K mm : 3,2...3,4
KF mm : 6,3...6,6
MS mm : 1,5...1,75
SVS max. mm : 4,1
XK mm : 18,5...20,5

XL

mm : 9,2...12,9

Remarks:

N01

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VWV 2,3 B
Edition : 20.07.87
replaces : 04.86
Calibrating oil : ISO 4113

Injection pump : VE 6/10F2400 L32-1
Type number : 0 460 406 009

Customer-specific information
Customer : VW

Engine : 087

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 000

Opening
pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1500
Setting value mm: 2,8...3,2

Supply-pump pressure:

Speed 1/min: 1500
Setting value bar: 5,2...5,8

Full-load del. w/out charge press.:

Speed 1/min : 1500
Del. quantity cm3/
1000H.: 28,5...29,5
Dispersion cm3/: 2,5
1000H.: (3,0)

Low-idle speed regulation:

Speed 1/min: 375
Del. quantity cm3/
1000H.: 6,0...10,0
Dispersion cm3/: 2,0
1000H.: (3,0)

Full-load speed regulation:

Speed 1/min: 2700
Del. quantity cm3/
1000H.: 7,0...11,0

Start:

Speed 1/min: 100
Del. quantity : -
mind cm3/1000H.: 35,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 800
TD travel mm: 5,7...6,5
mm: (5,4...6,8)
2nd speed 1/min: 1000
TD travel mm: 0,8...1,6
mm: (0,5...1,9)
3rd speed 1/min: 1500
TD travel mm: -
mm: (2,3...3,7)
4th speed 1/min: 2400
TD travel mm: 5,7...6,5
mm: (5,4...6,8)

Supply-pump pressure characteristic:

1st speed 1/min: 750
Supply-pump pressure bar: 3,2...3,8
2nd speed 1/min: 2400
Supply-pump pressure bar: 7,5...8,1

Overflow quantity at overflow valve:

1st speed 1/min: 750
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 2400
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 2800

Del. quantity cm3/: 0,0...6,0

1000H.: -
2nd speed 1/min: 2700

Del. quantity cm3/: -
1000H.: (5,0...13,0)

3rd speed 1/min: 2625

Del. quantity cm3/: 14,5...24,5
1000H.: (13,5...25,5)

4th speed 1/min: 2400

Del. quantity cm3/: 23,0...25,0
1000H.: (21,8...26,2)

5th speed 1/min: 1500

Del. quantity cm3/: -
1000H.: (26,8...31,2)

6th speed 1/min: 750

Del. quantity cm3/: 26,0...29,0
1000H.: (24,5...30,5)

Zero delivery (stop):

Mech. shutoff:

Speed 1/min: 2400
Del. quantity cm3/: 0..3
1000H.: -

Electr. shutoff:

Speed 1/min: 375
ELAB volt: -
Del. quantity cm3/: 0,0...3,0
max. 1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 375
Del. quantity cm3/: -
1000H.: (4,0...12,0)
2nd speed 1/min: 600
Del. quantity cm3/: 0,0...4,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 400
Del. quantity cm3/: -
ind. 1000H.: 20,0

2nd speed 1/min: 500
Del. quantity cm3/: -
ax. 1000H.: 25,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

| | | | |
|----------|----|---|-------------|
| K | mm | : | 3,2...3,4 |
| KF | mm | : | 6,3...6,6 |
| MS | mm | : | 1,5...1,75 |
| SVS max. | mm | : | 3,6 |
| XK | mm | : | 18,5...20,5 |
| XL | mm | : | 9,2...12,9 |

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VWV 2,4 K
Edition : 20.07.87
replaces : 04.86
Calibrating oil : ISO 4113

Injection pump : VE 6/10F2400 L32-2
Type number : 0 460 406 037

Customer-specific information
Customer : VW

Engine : 087

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 000

Opening
pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1500
Setting value mm: 2,8...3,2

Supply-pump pressure:

Speed 1/min: 1500
Setting value bar: 5,2...5,8

Full-load del. w/out charge press.:

Speed 1/min : 1500
Del. quantity cm3/
1000H.: 28,5...29,5
Dispersion cm3/: 2,5
1000H.: (3,0)

Low-idle speed regulation:

Speed 1/min: 375
Del.quantity cm3/
1000H.: 6,0...10,0
Dispersion cm3/: 2,0
1000H.: (3,0)

Full-load speed regulation:

Speed 1/min: 2700
Del.quantity cm3/
1000H.: 7,0...11,0

Start:

Speed 1/min: 100
Del.quantity : -
mind cm3/1000H.: 35,0

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 800
TD travel mm: 5,7...6,5
mm: (5,4...6,8)
2nd speed 1/min: 1000
TD travel mm: 0,8...1,6
mm: (0,5...1,9)
3rd speed 1/min: 1500
TD travel mm: -
mm: (2,3...3,7)
4th speed 1/min: 2400
TD travel mm: 5,7...6,5
mm: (5,4...6,8)

Supply-pump pressure characteristic:

1st speed 1/min: 750
Supply-pump
pressure bar: 3,2...3,8
2nd speed 1/min: 2400
Supply-pump
pressure bar: 7,5...8,1

Overflow quantity at overflow valve:

1st speed 1/min: 750
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 2400
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 2800

Del.quantity cm3/: 0,0...6,0

1000H.: -

2nd speed 1/min: 2700

Del.quantity cm3/: -
1000H.: (5,0...13,0)

3rd speed 1/min: 2625

Del.quantity cm3/: 14,5...24,5
1000H.: (13,5...25,5)

4th speed 1/min: 2400

Del.quantity cm3/: 23,0...25,0
1000H.: (21,8...26,2)

5th speed 1/min: 1500

Del.quantity cm3/: -
1000H.: (26,8...31,2)

6th speed 1/min: 750

Del.quantity cm3/: 26,0...29,0
1000H.: (24,5...30,5)

Zero delivery (stop):

Electr. shutoff:

Speed 1/min: 375
ELAB volt: -
Del.quantity cm3/: 0,0...3,0
max. 1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 375
Del.quantity cm3/: -
1000H.: (4,0...12,0)
2nd speed 1/min: 600
Del.quantity cm3/: 0,0...4,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 400
Del.quantity cm3/: -
ind. 1000H.: 20,0
2nd speed 1/min: 500
Del.quantity cm3/: -
ax. 1000H.: 25,0

Shutoff electromagnet:

Cut-in

min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K mm : 3,2...3,4
KF mm : 6,3...6,6
MS mm : 1,5...1,75
SVS max. mm : 3,6

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VWV 2,4 K2
Edition : 20.07.87
replaces : 04.86
Calibrating oil : ISO 4113

Injection pump : VE 6/10F2400 L32-3
Type number : 0 460 406 038

Customer-specific information
Customer : VW

Engine : 087

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 000

Opening
pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1500
Setting value mm: 2,8...3,2

Supply-pump pressure:

Speed 1/min: 1500
Setting value bar: 5,2...5,8

Full-load del. w/out charge press.:

Speed 1/min : 1500
Del. quantity cm³/
1000H.: 28,5...29,5
Dispersion cm³/
1000H.: (3,0)

Low-idle speed regulation:

Speed 1/min: 375
Del.quantity cm3/
1000H.: 6,0...10,0
Dispersion cm3/: 2,0
1000H.: (3,0)

Full-load speed regulation:

Speed 1/min: 2700
Del.quantity cm3/
1000H.: 7,0...11,0

Start:

Speed 1/min: 100
Del.quantity : -
mind cm3/1000H.: 35,0

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 800
TD travel mm: 5,7...6,5
mm: (5,4...6,8)
2nd speed 1/min: 1000
TD travel mm: 0,8...1,6
mm: (0,5...1,9)
3rd speed 1/min: 1500
TD travel mm: -
mm: (2,3...3,7)
4th speed 1/min: 2400
TD travel mm: 5,7...6,5
mm: (5,4...6,8)

Supply-pump pressure characteristic:

1st speed 1/min: 750
Supply-pump pressure bar: 3,2...3,8
2nd speed 1/min: 2400
Supply-pump pressure bar: 7,5...8,1

Overflow quantity at overflow valve:

1st speed 1/min: 750
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 2400
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.: 1st speed 1/min: 2800

Del.quantity cm3/: 0,0...6,0
1000H.: -

2nd speed 1/min: 2700
Del.quantity cm3/: -
1000H.: (5,0...13,0)

3rd speed 1/min: 2625
Del.quantity cm3/: 14,5...24,5
1000H.: (13,5...25,5)

4th speed 1/min: 2400
Del.quantity cm3/: 23,0...25,0
1000H.: (21,8...26,2)

5th speed 1/min: 1500
Del.quantity cm3/: -
1000H.: (26,8...31,2)

6th speed 1/min: 750
Del.quantity cm3/: 26,0...29,0
1000H.: (24,5...30,5)

Zero delivery (stop):

Mech. shutoff:
Speed 1/min: 2400
Del.quantity cm3/: 0..3
1000H.: -

Electr. shutoff:
Speed 1/min: 375
ELAB volt: -
Del.quantity cm3/: 0,0...3,0
max. 1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 375
Del.quantity cm3/: -
1000H.: (4,0...12,0)
2nd speed 1/min: 600
Del.quantity cm3/: 0,0...4,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 400
Del.quantity cm3/: -
ind. 1000H.: 20,0

2nd speed 1/min: 500
Del.quantity cm3/: -
ax. 1000H.: 25,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

| | | | |
|----------|----|---|------------|
| K | mm | : | 3,2...3,4 |
| KF | mm | : | 6,3...6,6 |
| MS | mm | : | 1,5...1,75 |
| SVS max. | mm | : | 3,6 |

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : ONA
Edition : 17.07.87
replaces : 16.12.86
Calibrating oil : ISO 4113

Injection pump : VE 6/10F1400 R209-1
Type number : O 460 406 052

Customer-specific information
Customer : ONAN

Engine : L 634T

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 000

Opening
pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : 0,2
(from BDC): +-0,02 (0,04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1100
Charge press. hPa: 800
Setting value mm: 2,8...3,2

Supply-pump pressure:

Speed 1/min: 1100
Charge press. hPa: 800
Setting value bar: 3,8...4,4

Full-load del. with charge press.:

Speed 1/min: 1100
Charge press. hPa: 800
Del. quantity cm3/
1000H.: 61,0...62,0
Dispersion cm3/ : 3,0
1000H : -

Full-load del. w/out charge press.:

Speed 1/min : 700
Del. quantity cm3/
1000H.: 44,5...45,5

Low-idle speed regulation:

Speed 1/min: 350
Charge press. hPa: -
Del. quantity cm3/
1000H.: 23,0...27,0
Dispersion cm3/ : 3,0
1000H.: -

Full-load speed regulation:

Speed 1/min: 1480
Charge press. hPa: 800
Del. quantity cm3/
1000H: 39,0...45,0

Start:

Speed 1/min: 100
Del. quantity : -
mind cm3/1000H.: 42,0

Load-dependent start of delivery:

Speed 1/min: 1100

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 800
Charge press. hPa: 800
TD travel mm: 1,4...2,2
mm: (1,1...2,5)
2nd speed 1/min: 1100
TD travel mm: -
mm: (2,3...3,7)
3rd speed 1/min: 1400
Charge press. hPa: 800
TD travel mm: 4,2...4,8
mm: (3,8...5,2)

Supply-pump pressure characteristic:

1st speed 1/min: 400

N12

Charge press. hPa: 800
Supply-pump
pressure bar: 1,2...1,8
2nd speed 1/min: 1400
Charge press. hPa: 800
Supply-pump
pressure bar: 4,8...5,4

Overflow quantity at overflow valve:

1st speed 1/min: 700
Charge press. hPa: 800
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 1400
Charge press. hPa: 800
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 700
Charge-air pressure-setting
point hPa: 200
Del. quantity cm3/: 47,0...48,0
1000H.: (45,2...49,8)
2nd speed 1/min: 1600
Charge press. hPa: 800
Del. quantity cm3/: 0,0...3,6
1000H.: -
3rd speed 1/min: 1560
Charge press. hPa: 800
Del. quantity cm3/: 6,0...14,0
1000H.: (5,5...14,5)
4th speed 1/min: 1480
Charge press. hPa: 800
Del. quantity cm3/: -
1000H.: (37,5...46,5)
5th speed 1/min: 1400
Charge press. hPa: 800
Del. quantity cm3/: 57,0...60,0
1000H.: (56,2...60,8)
6th speed 1/min: 1100
Charge press. hPa: 800
Del. quantity cm3/: -
1000H.: (59,2...63,8)
7th speed 1/min: 1100
Charge press. hPa: 800
Del. quantity cm3/: -
1000H.: (59,2...63,8)
8th speed 1/min: 700
Charge press. hPa: 800
Del. quantity cm3/: 58,0...61,0
1000H.: (57,2...61,8)
9th speed 1/min: 700
Charge press. hPa: -
Del. quantity cm3/: -
1000H.: (42,7...47,3)

Zero delivery (stop):

Mech. shutoff:

Speed 1/min: 1400
Del.quantity cm3/: 0..3
1000H.: -

Electr. shutoff:

Speed 1/min: 350
ELAB volt: -
Del.quantity cm3/: 0,0...3,0
max. 1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 350
Del.quantity cm3/: -
1000H.: (21,0..29,0)
2nd speed 1/min: 400
Del.quantity cm3/: 9,5...16,5
1000H.: (8,5...17,5)
3rd speed 1/min: 450
Del.quantity cm3/: 0,0...3,6
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 230
Del.quantity cm3/: -
ind. 1000H: 42,0

2nd speed 1/min: 300
Del.quantity cm3/: -
ax. 1000H: 42,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K mm : -
KF mm : 5,7...6,0
MS mm : 0,7..0,95
SVS max. mm : 1,6

Remarks:

Correction at adjusting nut (46)

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAS 5,9 A
Edition : 17.07.87
replaces : -
Calibrating oil : ISO 4113
Injection pump : VE 6/10F1150 R287
Type number : 0 460 406 056

Customer-specific information
Customer : CASE

Engine : D 358-1056

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 020

Opening
pressure bar : 172...175

Perforated-plate
diameter mm : 0.6

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 800
Setting value mm: 5,4...5,8

Supply-pump pressure:

Speed 1/min: 800
Setting value bar: 5,3...5,9

Full-load del. w/out charge press.:

Speed 1/min : 800

Del.quantity cm3/
1000H.: 72,5...73,5
Dispersion cm3/: 3,0
1000H.: (3,5)

Low-idle speed regulation:

Speed 1/min: 350
Del.quantity cm3/
1000H.: 18,0...22,0
Dispersion cm3/: 3,0
1000H.: (3,5)

Full-load speed regulation:

Speed 1/min: 1200
Del.quantity cm3/
1000H.: 49,0...55,0

Start:

Speed 1/min: 100
Del.quantity : -
mind cm3/1000H.: 70,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 500
TD travel mm: 2,4...3,2
mm: (2,1...3,5)
2nd speed 1/min: 800
TD travel mm: -
mm: (4,9...6,3)
3rd speed 1/min: 1000
TD travel mm: 6,7...7,5
mm: (6,4...7,8)

Supply-pump pressure characteristic:

1st speed 1/min: 500
Supply-pump
pressure bar: 4,0...4,6
2nd speed 1/min: 1000
Supply-pump
pressure bar: 6,1...6,7

Overflow quantity at overflow valve:

1st speed 1/min: 500
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 1100
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:
1st speed 1/min: 1350

Del. quantity cm³/: 0,0...3,0
1000H.: -
2nd speed 1/min: 1300
Del. quantity cm³/: 0,0...10,0
1000H.: -
3rd speed 1/min: 1250
Del. quantity cm³/: 10,0...50,0
1000H.: -
4th speed 1/min: 1200
Del. quantity cm³/: -
1000H.: (47,5...56,5)
5th speed 1/min: 1100
Del. quantity cm³/: 76,5...79,5
1000H.: (75,5...80,5)
6th speed 1/min: 800
Del. quantity cm³/: -
1000H.: (70,7...75,3)
7th speed 1/min: 500
Del. quantity cm³/: 71,0...75,0
1000H.: (70,0...76,0)

Zero delivery (stop):

Mech. shutoff:
Speed 1/min: 1100
Del. quantity cm³/: 0..3
1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 350
Del. quantity cm³/: -
1000H.: (16,0...24,0)
2nd speed 1/min: 450
Del. quantity cm³/: 0,0...4,9
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 350
Del. quantity cm³/: -
ind. 1000H: 80,0
2nd speed 1/min: 450
Del. quantity cm³/: -
ax. 1000H: 80,0

Shutoff electromagnet:

Cut-in
min. voltage : -
Rated voltage : -

Mounting and assembly dimensions:

Designation
K mm : 3,2...3,4
KF mm : 5,7...6,0
MS mm : 1,4...1,65

SVS max. mm : 1,6

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : S0F 2,SK
Edition : 30.06.87
replaces : 08.84
Calibrating oil : ISO 4113

Injection pump : VE 4/11F1900 R127
Type number : 0 460 414 008

Customer-specific information
Customer : IVECO-S0FIM

Engine : 8140.21

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 023

Opening
pressure bar : 172...175

Perforated-plate
diameter mm : 0.4

Test inj. tubing : 1 680 750 073

Outside diameter : 6
x Wall thickness : 2
x Length mm : 450

Start of delivery
Prestroke mm : 0,3
(from BDC) : +-0,02 (0,04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1100
Charge press. hPa: 1000
Setting value mm: 4,2...4,6

Supply-pump pressure:

Speed 1/min: 1100
Charge press. hPa: 1000

Setting value bar: 5,3...5,9

Full-load del. with charge press.:

Speed 1/min: 1100
Charge press. hPa: 1000
Del. quantity cm3/
1000H.: 42,5...43,5
Dispersion cm3/ : 3,5
1000H.: (4,0)

Full-load del. w/out charge press.:

Speed 1/min : 500
Del. quantity cm3/
1000H.: 39,5...40,5

Low-idle speed regulation:

Speed 1/min: 400
Del. quantity cm3/
1000H.: 13,0...17,0
Dispersion cm3/ : 3,0
1000H.: (4,0)

Full-load speed regulation:

Speed 1/min: 2300
Charge press. hPa: 1000
Del. quantity cm3/
1000H.: 18,0...24,0

Start:

Speed 1/min: 100
Del. quantity : -
mind cm3/1000H.: 60,0

Load-dependent start of delivery:

Speed 1/min: 1100

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 800
Charge press. hPa: 1000
TD travel mm: 2,4...3,2
mm: (2,1...3,5)
2nd speed 1/min: 1100
Charge press. hPa: 1000
TD travel mm: -
mm: (3,7...5,1)
3rd speed 1/min: 1500
Charge press. hPa: 1000
TD travel mm: 5,8...6,6
mm: (5,5...6,9)
4th speed 1/min: 1900

Charge press. hPa: 1000
TD travel mm: 7,6...8,4
mm: (7,3...8,7)

Supply-pump pressure characteristic:

1st speed 1/min: 600
Charge press. hPa: 1000
Supply-pump pressure bar: 3,8...4,4
2nd speed 1/min: 1900
Charge press. hPa: 1000
Supply-pump pressure bar: 7,5...8,1

Overflow quantity at overflow valve:

1st speed 1/min: 600
Charge press. hPa: -
Overflow : 55...138
quantity cm3/10s: (40...153)
2nd speed 1/min: 1900
Charge press. hPa: -
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 900
Charge-air pressure-setting point hPa: 400
LbA stroke mm: 3,5
Del. quantity cm3/ : 37,0...38,0
1000H.: (34,7...40,2)
2nd speed 1/min: 2450
Charge press. hPa: 1000
Del. quantity cm3/ : 0,0...10,0
1000H.: -
3rd speed 1/min: 2300
Charge press. hPa: 1000
Del. quantity cm3/ : -
1000H.: (16,5...25,5)
4th speed 1/min: 2100
Charge press. hPa: 1000
Del. quantity cm3/ : 30,0...38,0
1000H.: (29,5...38,5)
5th speed 1/min: 1900
Charge press. hPa: 1000
Del. quantity cm3/ : 37,75...40,25
1000H.: (36,3...41,7)
6th speed 1/min: 1500
Charge press. hPa: 1000
Del. quantity cm3/ : 39,75...42,25
1000H.: (38,3...43,7)
7th speed 1/min: 1100
Charge press. hPa: 1000
Del. quantity cm3/ : -
1000H.: (40,3...45,7)
8th speed 1/min: 500
Charge press. hPa: -

Del.quantity cm3/: -
1000H: (37,3...42,7)

Zero delivery (stop):

Mech. shutoff:

Speed 1/min: 1900
Del.quantity cm3/: -
1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 350
1000H.: 25,5...34,5)
2nd speed 1/min: 400
Del.quantity cm3/: 13,0...17,0
1000H.: (10,5...19,5)
3rd speed 1/min: 550
Del.quantity cm3/: 0,0...5,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 200
Del.quantity cm3/: -
ind. 1000H: 55,0

2nd speed 1/min: 350
Del.quantity cm3/: -
ax. 1000H: 55,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

| | | |
|----------|----|--------------|
| K | mm | : - |
| KF | mm | : K-0T |
| MS | mm | : 0,9...1,15 |
| SVS max. | mm | : 2,4 |

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : PER 5,8 B5
Edition : 20.07.87
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 4/11F1400 R39-1
Type number : 0 460 414 035

Customer-specific information
Customer : PERKINS

Engine : Q 20.B.4.236 V

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 022

Opening
pressure bar : 130...133

Test inj. tubing : 1 680 750 073

Outside diameter : 6
x Wall thickness : 2
x Length mm : 450

Start of delivery
Prestroke mm : 0,3
(from BDC): +-0,02 (0,04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1100
Setting value mm: 4,6...5,0

Supply-pump pressure:

Speed 1/min: 1100
Setting value bar: 4,7...5,3

Full-load del. w/out charge press.:

Speed 1/min : 1100

Del. quantity cm3/
1000H.: 72,5...73,5
Dispersion cm3/: 2,5
1000H.: (4,0)

Low-idle speed regulation:

Speed 1/min: 350
Del. quantity cm3/
1000H.: 18,0...22,0
Dispersion cm3/: 2,5
1000H.: (4,0)

Full-load speed regulation:

Speed 1/min: 1500
Del. quantity cm3/
1000H.: 49,0...55,0

Start:

Speed 1/min: 100
Del. quantity : -
mind cm3/1000H.: 75,0

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 500
TD travel mm: 0,2...0,8
mm: (0,0...1,2)
2nd speed 1/min: 1100
TD travel mm: -
mm: (4,1...5,5)
3rd speed 1/min: 1300
TD travel mm: 5,8...6,6
mm: (5,5...6,9)

Supply-pump pressure characteristic:

1st speed 1/min: 500
Supply-pump pressure bar: 2,9...3,5
2nd speed 1/min: 1300
Supply-pump pressure bar: 5,3...5,9

Overflow quantity at overflow valve:

1st speed 1/min: 500
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 1400
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.: 1st speed 1/min: 1700

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Del. quantity cm3/: 0,0...1,5
1000H.: -
2nd speed 1/min: 1550
Del. quantity cm3/: 28,5...35,5
1000H.: (27,5...36,5)
3rd speed 1/min: 1500
Del. quantity cm3/: 49,0...55,0
1000H.: (47,5...56,5)
4th speed 1/min: 1300
Del. quantity cm3/: 70,7...73,3
1000H.: (69,4...74,6)
5th speed 1/min: 1100
Del. quantity cm3/: -
1000H.: (70,4...74,6)
6th speed 1/min: 500
Del. quantity cm3/: 42,0...45,0
1000H.: (40,1...46,9)

Zero delivery (stop):

Mech. shutoff:
Speed 1/min: 1400
Del. quantity cm3/: -
1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 350
Del. quantity cm3/: -
1000H.: (15,5...24,5)
2nd speed 1/min: 400
Del. quantity cm3/: 6,0...12,0
1000H.: (4,5...13,5)
3rd speed 1/min: 450
Del. quantity cm3/: 0,0...1,5
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 200
Del. quantity cm3/: -
ind. 1000H: 30,0
2nd speed 1/min: 250
Del. quantity cm3/: -
ax. 1000H: 40,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation
K mm : -
KF mm : 5,1...5,4
MS mm : 0,6...0,8

SVS max. mm : -

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA 3,6 K
Edition : 20.07.87
replaces : 18.12.86
Calibrating oil : ISO 4113

Injection pump : VE 4/11F1350 R257
Type number : 0 460 414 039

Customer-specific information
Customer : FIAT-IVECO

Engine : 8040.25.200

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 020

Opening
pressure bar : 172...175

Perforated-plate
diameter mm : 0.6

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : 0,4
(from BDC): +-0,02 (0,04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1000
Charge press. hPa: 1000
Setting value mm: 3,8...4,2

Supply-pump pressure:

Speed 1/min: 1000
Charge press. hPa: 1000

Setting value bar: 5,7...6,3

Full-load del. with charge press.:

Speed 1/min: 800
Charge press. hPa: 1000
Del. quantity cm3/
1000H.: 92,5...93,5
Dispersion cm3/ : 5,0
1000H. : -

Full-load del. w/out charge press.:

Speed 1/min : 500
Del. quantity cm3/
1000H.: 68,5...69,5

Low-idle speed regulation:

Speed 1/min: 350
Charge press. hPa: -
Del. quantity cm3/
1000H.: 22,0...26,0
Dispersion cm3/ : 3,5
1000H.: (4,0)

Full-load speed regulation:

Speed 1/min: 1500
Charge press. hPa: 1000
Del. quantity cm3/
1000H.: 34,0...40,0

Start:

Speed 1/min: 100
Del. quantity : -
mind cm3/1000H.: 90,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 800
Charge press. hPa: 1000
TD travel mm: 1,7...2,5
mm: (1,4...2,8)
2nd speed 1/min: 1000
Charge press. hPa: 1000
TD travel mm: -
mm: (3,3...4,7)
3rd speed 1/min: 1350
Charge press. hPa: 1000
TD travel mm: 6,3...7,1
mm: (6,0...7,4)

Supply-pump pressure characteristic:

1st speed 1/min: 500

Charge press. hPa: 1000

Supply-pump
pressure bar: 3,6...4,2
2nd speed 1/min: 800
Charge press. hPa: 1000
Supply-pump
pressure bar: 4,8...5,4
3rd speed 1/min: 1350
Charge press. hPa: 1000
Supply-pump
pressure bar: 7,0...7,6

Overflow quantity at overflow valve:

1st speed 1/min: 500
Charge press. hPa: 1000
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 1350
Charge press. hPa: 1000
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 500
Charge-air pressure-setting
point hPa: 250
Del. quantity cm3/ : 79,0...80,0
1000H.: (76,5...82,5)
2nd speed 1/min: 1600
Charge press. hPa: 1000
Del. quantity cm3/ : 0,0...3,0
1000H.: -
3rd speed 1/min: 1500
Charge press. hPa: 1000
Del. quantity cm3/ : -
1000H.: (31,0...43,0)
4th speed 1/min: 1350
Charge press. hPa: 1000
Del. quantity cm3/ : 86,5...89,5
1000H.: (85,0...91,0)
5th speed 1/min: 800
Charge press. hPa: 1000
Del. quantity cm3/ : -
1000H.: (90,0...96,0)
6th speed 1/min: 500
Charge press. hPa: 1000
Del. quantity cm3/ : 83,5...86,5
1000H.: (82,0...88,0)
7th speed 1/min: 500
Charge press. hPa: -
Del. quantity cm3/ : -
1000H.: (66,0...72,0)

Zero delivery (stop):

Mech. shutoff:

Speed 1/min: 1350
Del. quantity cm3/ : 0...3
1000H.: -

Electr. shutoff:
Speed 1/min: 350
ELAB volt: -
Del.quantity cm3/: 0,0...3,0
max. 1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 350
Del.quantity cm3/: -
1000H.: (19,0..29,0)
2nd speed 1/min: 400
Del.quantity cm3/: 2,5...9,5
1000H.: -
3rd speed 1/min: 430
Del.quantity cm3/: 0,0...3,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 150
Del.quantity cm3/: -
ind. 1000H: 90,0
2nd speed 1/min: 230
Del.quantity cm3/: -
ax. 1000H: 60,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

| | | |
|----------|----|---------------|
| K | mm | : - |
| KF | mm | : 5,2...5,5 |
| MS | mm | : 1,3...1,55 |
| SVS max. | mm | : 5,6 |
| XK | mm | : 17,0...19,0 |
| XL | mm | : 14,2...17,6 |

Remarks:

Correction at adjusting nut (46)

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : PER 5,0 A
Edition : 20.07.87
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 4/11F1500 R266
Type number : 0 460 414 041

Customer-specific information
Customer : PERKINS

Engine : 500 HYDROVAN

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 022

Opening
pressure bar : 130...133

Test inj. tubing : 1 680 750 073

Outside diameter : 6
x Wall thickness : 2
x Length mm : 450

Start of delivery
Prestroke mm : 0,5
(from BDC) : +0,02 (0,04)

Indicator setting:
Piston stroke mm : 1.42
Outlet : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1100
Setting value mm: 2,4...2,8

Supply-pump pressure:

Speed 1/min: 1100
Setting value bar: 4,9...5,5

Full-load del. w/out charge press.:

Speed 1/min: 600
Del. quantity cm³/
1000H.: 25,9...26,9
Dispersion cm³/: 3,5
1000H.: (4,0)

Low-idle speed regulation:

Speed 1/min: 350
Del. quantity cm³/
1000H.: 11,0...15,0
Dispersion cm³/: 3,0
1000H.: (4,0)

Full-load speed regulation:

Speed 1/min: 1600
Del. quantity cm³/
1000H.: 12,0...18,0

Start:

Speed 1/min: 100
Del. quantity : -
mind cm³/1000H.: 70,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 700
TD travel mm: 0,4...1,2
mm: (0,1...1,5)
2nd speed 1/min: 1100
TD travel mm: -
mm: (1,9...3,3)
3rd speed 1/min: 1350
TD travel mm: 3,4...4,2
mm: (3,1...4,5)
4th speed 1/min: 1500
TD travel mm: 3,7...4,5
mm: (3,4...4,8)

Supply-pump pressure characteristic:

1st speed 1/min: 700
Supply-pump
pressure bar: 3,5...4,1
2nd speed 1/min: 1500
Supply-pump
pressure bar: 6,4...7,0

Overflow quantity at overflow valve:

1st speed 1/min: 700

Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 1500
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1650
Del. quantity cm3/: 0,0...3,0
1000H.: -
2nd speed 1/min: 1600
Del. quantity cm3/: -
1000H.: (10,5...19,5)
3rd speed 1/min: 1500
Del. quantity cm3/: 45,5...48,5
1000H.: (44,4...49,6)
4th speed 1/min: 1100
Del. quantity cm3/: 44,8...47,8
1000H.: (43,7...48,9)
5th speed 1/min: 800
Del. quantity cm3/: 36,3...38,3
1000H.: (34,7...39,9)
6th speed 1/min: 600
Del. quantity cm3/: -
1000H.: (23,8...29,0)

Zero delivery (stop):

Mech. shutoff:

Speed 1/min: 1500
Del. quantity cm3/: -
1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 350
Del. quantity cm3/: -
1000H.: (8,5...17,5)
2nd speed 1/min: 400
Del. quantity cm3/: 3,0...9,0
1000H.: (1,5...10,5)
3rd speed 1/min: 460
Del. quantity cm3/: 0,0...4,5
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 300
Del. quantity cm3/: -
ind. 1000H: 33,0
2nd speed 1/min: 400
Del. quantity cm3/: 20,0...35,0
ax. 1000H: -

Shutoff electromagnet:

Cut-in
min. voltage : 10,0

Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

| | | | |
|----------|----|---|------------|
| K | mm | : | - |
| KF | mm | : | K-OT |
| MS | mm | : | 1,2...1,45 |
| SVS max. | mm | : | 3,8 |

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : PER 5,0 B
Edition : 20.07.87
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 4/11F1500 R266-1
Type number : 0 460 414 042

Customer-specific information
Customer : PERKINS

Engine : 500 HYDROVAN

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 022

Opening
pressure bar : 130...133

Test inj. tubing : 1 680 750 073

Outside diameter : 6
x Wall thickness : 2
x Length mm : 450

Start of delivery
Prestroke mm : 0,5
(from BDC): +-0,02 (0,04)

Indicator setting:
Piston stroke mm: 1.42
Outlet : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1100
Setting value mm: 2,4...2,8

Supply-pump pressure:

Speed 1/min: 1100
Setting value bar: 4,9...5,5

Rated voltage : 12,0
ull-load del. w/out charge press.:
Mounting and assembly dimensions:
peed 1/min : 600

Designation: cm3/
K mm : - ,9...26,9
KF mm : K-0T
MS mm : 1,2...1,45
SVS max. mm : 3,8

ow-idle speed regulation:
Remarks:
Speed 1/min: 350
Del.quantity cm3/
1000H.: 11,0...15,0
Dispersion cm3/: 3,0
1000H.: (4,0)
Full-load speed regulation:

Speed 1/min: 1600
Del.quantity cm3/
1000H.: 12,0...18,0

Start:

Speed 1/min: 100
Del.quantity : -
mind cm3/1000H.: 70,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 700
TD travel mm: 0,4...1,2
mm: (0,1...1,5)
2nd speed 1/min: 1100
TD travel mm: -
mm: (1,9...3,3)
3rd speed 1/min: 1350
TD travel mm: 3,4...4,2
mm: (3,1...4,5)
4th speed 1/min: 1500
TD travel mm: 3,7...4,5
mm: (3,4...4,8)

Supply-pump pressure characteristic:

1st speed 1/min: 700
Supply-pump pressure bar: 3,5...4,1
2nd speed 1/min: 1500
Supply-pump pressure bar: 6,4...7,0

Overflow quantity at overflow valve:

1st speed 1/min: 700

Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 1500
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1650
Del.quantity cm3/: 0,0...3,0
1000H.: -
2nd speed 1/min: 1600
Del.quantity cm3/: -
1000H.: (10,5...19,5)
3rd speed 1/min: 1500
Del.quantity cm3/: 45,5...48,5
1000H.: (44,4...49,6)
4th speed 1/min: 1100
Del.quantity cm3/: 44,8...47,8
1000H.: (43,7...48,9)
5th speed 1/min: 800
Del.quantity cm3/: 36,3...38,3
1000H.: (34,7...39,9)
6th speed 1/min: 600
Del.quantity cm3/: -
1000H.: (23,8...29,0)

Zero delivery (stop):

Mech. shutoff:
Speed 1/min: 1500
Del.quantity cm3/: -
1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 350
Del.quantity cm3/: -
1000H.: (8,5...17,5)
2nd speed 1/min: 400
Del.quantity cm3/: 3,0...9,0
1000H.: (1,5...10,5)
3rd speed 1/min: 460
Del.quantity cm3/: 0,0...4,5
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 300
Del.quantity cm3/: -
ind. 1000H.: 33,0
2nd speed 1/min: 400
Del.quantity cm3/: 20,0...35,0
ax. 1000H.: -

Shutoff electromagnet:

Cut-in
min. voltage : 10,0